XR-6650RDS/6659RDS

SERVICE MANUAL

AEP Model
UK Model

Photo : XR-6650RDS

Model Name Using Similar Mechanism	XR-6450RDS
Tape Transport Mechanism Type	MG-50EX-39

SPECIFICATIONS

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.08 % (WRMS)
Frequency response	30 – 18,000 Hz
Signal-to- noise ratio	

Cassette type	Dolby NR off	Dolby B NR
TYPE II, IV	61 dB	67 dB
TYPE I	58 dB	64 dB

Tuner section

FM

Tuning range	87.5 – 108.0 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 70 dB (mono)
Harmonic distortion at 1 kHz	0.5 % (stereo), 0.3 % (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

MW/LW

Tuning range	MW: 531 – 1,602 kHz LW: 153 – 281 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	MW: 30 µV LW: 50 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	22 W × 4 (at 4 ohms)

General

Output lead	Power antenna relay control lead Power amplifier control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 188 × 58 × 176 mm (w/h/d) not incl. projecting parts and controls
Mounting dimension	Approx. 182 × 53 × 155 mm (w/h/d) not incl. projecting parts and controls
Mass	Approx. 1.2 kg
Supplied accessories	Power connecting cord (1) Mounting hardware (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

FM/MW/LW CASSETTE CAR STEREO

SONY®

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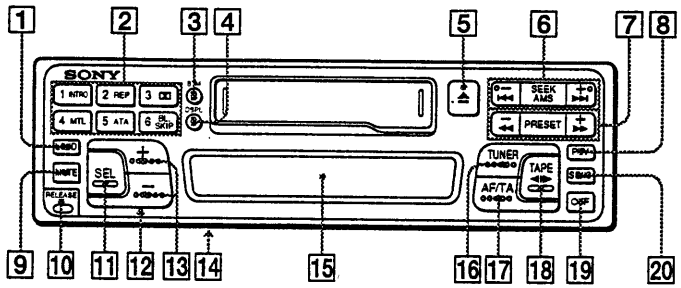
Location of Controls



Refer to the pages in ● for details.

1 LOUD (loudness) button ⓬

2 During radio reception:
Preset number buttons ❽

During tape playback:

- 1 INTRO INTRO button ❻⓭
- 2 REP REPEAT button ❻⓬
- 3 DOLBY NR (Dolby B NR) button ❻⓫
- 4 MTL MTL (Cassette type select) button ❻
- 5 ATA ATA (Automatic Tuner Activation) button ❻
- 6 BL SKIP BL.SKIP button ❻⓭

3 BTM (Best Tuning Memory) button ❼

4 DSPL (display mode change/time set) button ❺❾

5 ⏏ (eject) button ❺⓬

6 SEEK/AMS button ❻❼

7 PRESET button ❺❻❼❽

8 PTY (programme type) button ⓫

9 MUTE button ⓬

10 RELEASE (front panel release) button ❹⓭

11 SEL (control mode select) button ❺⓫⓬⓭

12 Reset button (located on the front side of the unit hidden by the front panel) ❹
Press this button when you use this unit for the first time, when you have changed the car battery, or when the buttons of this unit do not function properly.

13 (volume/bass/treble/balance/fader control) button ❺⓬

14 POWER SELECT switch (located on the bottom of the unit)
See "POWER SELECT Switch" in the installation/connections manual.

15 Display window

16 TUNER (radio on/band select) button ❺❼❽

17 AF/TA (alternative frequency/traffic announcement) button ❾❿

18 TAPE/◀II▶ (playback/transport direction change) button ❺

19 OFF button ❹❺⓬

20 SENS (sensitivity adjust) button ❼

EN

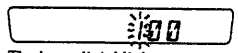
Setting the Clock

The clock has a 24-hour digital indication.

For example, setting it to 10:08

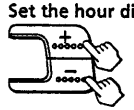
1 Display the time.
(Press the OFF or the DSPL button during the unit operation.)

2 Press the DSPL button for more than two seconds.



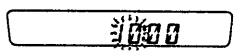
The hour digit blinks.

Set the hour digits.

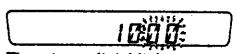


to go forward

to go back

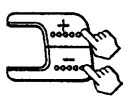


3 Press the SEL button momentarily.



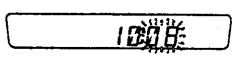
The minute digit blinks.

Set the minute digits.

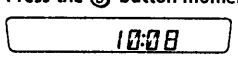


to go forward

to go back



4 Press the DSPL button momentarily.



The clock activates.

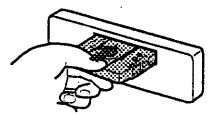
Note

If the POWER SELECT switch on the bottom of unit is set to the ❽ position, the clock cannot be set unless the power is turned on. Set the clock after you have turned on the radio, or started cassette playback.

Cassette Player Operation

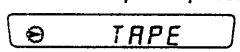
Listening to Tape Playback

After inserting the cassette, playback will start automatically.

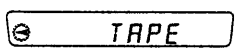


If a cassette is already inserted, press the TAPE button to start playback.
If you press during playback, the tape transport direction will change.

Indication of Tape Transport Direction



The side facing up is being played.



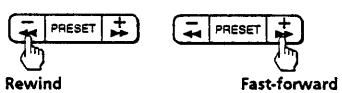
The side facing down is being played.

To stop playback,
eject the cassette by pressing the ⏏ button or press the OFF button.
Playback stops also when you select radio by pressing the TUNER button.

Ejecting the Cassette

Press the ⏏ button.

Fast-winding the Tape



Rewind

Fast-forward

To start playback during rewinding or fast-forwarding, press the TAPE button.

EN

Cassette Player Operation

SECTION 1
GENERAL

This section is extracted from XR-6650RDS instruction manual.

Playing a Tape Recorded in the Dolby B NR System

Press the [3 DOLBY NR] button when you want to listen to a tape recorded in the Dolby B NR system. → "DOLBY NR" appears in the display.
To cancel, press again.

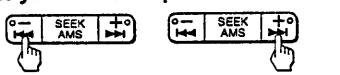
Playing a CrO_2 or Metal Tape

Press the [4 MTL] button when you want to listen to a CrO_2 (TYPE II) or metal (TYPE IV) tape. → "MTL" will appear on the display.
To cancel, press again.

Locating the Beginnings of the Tracks

— AMS (Automatic Music Sensor) Function

During playback, press either side of the SEEK/AMS button the number of times you wish to skip the tracks.



To locate the previous tracks — To locate the succeeding tracks

Up to nine tracks can be skipped.

If the blanks between the tracks are shorter than four seconds, or if there are noises, the AMS function will not work. Also, the unit may read long sections of low volume music or quiet sections on a track as blanks between tracks.

Searching the Desired Track — Intro Scan Function

Press the [1 INTRO] button during playback. → "INTRO" appears on the display.
The first 10 seconds of all the tracks are played. When you find the desired track, press the button once more. The unit returns to the normal playback mode.

Playing Tracks Repeatedly

— Repeat Play Function

Press the [2 REP] button during playback. → "REP" appears on the display.
When the currently played track is over, it will be played again from the beginning.
To cancel this mode, press the button again.

Radio Reception during Fast-forwarding or Rewinding of a Tape

— ATA (Automatic Tuner Activation) Function

Press the [5 ATA] button during playback. → "ATA" appears on the display.
When fast-forwarding or rewinding with the [PRESET] button, the tuner will turn on automatically.

Skipping Blanks Automatically during Tape Playback — Blank Skip Function

Press the [6 BL. SKIP] button during playback. → "BL.SKIP" appears on the display.
Blanks longer than eight seconds will be automatically skipped during tape playback.

Radio Reception

Searching for the Stations Automatically

— Automatic Tuning

1 Select the desired band.

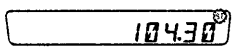
FM1 → FM2 → FM3 → MW → LW → FM1

2 Press either side of the SEEK/AMS button to search for the station (automatic tuning).

For lower frequencies — For higher frequencies

The scanning stops when a station is received. Press either side of the button repeatedly until the desired station is received.

When an FM stereo program with a sufficient signal strength is tuned in,



the "ST" indication will appear.

To avoid the automatic tuning from stopping on stations too frequently (local seek mode), press the [SENS] button momentarily to get the "LCL" indication.
Only the stations with relatively strong signals can be tuned in. The local seek mode functions only when the automatic tuning is in operation.

If FM Stereo Reception is Poor — Monaural Mode

Press the [SENS] button momentarily. → "MONO" appears on the display.
The sound will improve, but it will become monaural.

Tuning in by Adjusting the Frequency — Manual Tuning

1 Select the desired band.

2 Press and hold either side of the PRESET button.
Release the button when the desired station is received.

For lower frequencies — For higher frequencies

PREVENTING ACCIDENTS!
When tuning in during driving, use the automatic tuning and the memory preset search function (page 8) instead of the manual tuning.

Memorizing Stations Automatically

— BTM (Best Tuning Memory) Function

This function selects from the currently received band the stations with the strongest signals and memorizes them in order of their frequency.

1 Select the desired band.

2 Press the BTM (6) button for more than two seconds.
- When there is no preset number indicated on the display window, stations will be stored on all preset number buttons on the currently selected band.
- When there is a preset number indicated on the display window, the unit will store stations on all preset number buttons from the one currently displayed.

For example, when you select FM2 and preset number 3 is displayed,
the operation will start from preset number 3 on FM2, and will stop at preset number 6 on FM3.

continue to next page →

3 FM1, FM2 and FM3 only:
Press preset number button [1 INTRO] momentarily, then press again for about two seconds until you hear a beep tone.
→ The station will be stored.
Repeat this operation with preset number buttons [2 REP] through [6 BL SKIP].

Notes
- *When "AF OFF" is displayed and you activate BTM, the unit will store only stations not transmitting RDS data. Depending on reception conditions however, it may happen that RDS stations are stored.*
- *When storing only RDS stations (page 10), step 3 is not necessary.*

Memorizing Only the Desired Stations

1 Select the desired band.

2 Tune in the station which you wish to store on the preset number button.

3 Keep the desired preset number button ([1 INTRO] to [6 BL SKIP]) pressed for about two seconds until you hear a beep tone.

The number of the pressed preset number button appears on the display window.

Up to 6 stations on each band (FM1, FM2, FM3, MW and LW) can be stored on the preset number buttons in order of your choice. Therefore, 18 stations can be memorized on FM.
If you try to store another station on the same preset number button, the previously stored station will be erased.

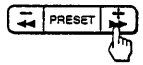
Receiving the Memorized Stations

1 Select the desired band.

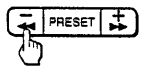
2 Press momentarily the preset number ([1 INTRO] to [6 BL SKIP]) button on which the desired station is stored.

Note
If you press the preset number button for more than two seconds, the currently received station will be memorized again. To receive the previously memorized station, make sure that the preset number button is pressed only momentarily.

Press either side of the PRESET button momentarily to receive in order the stations stored in the memory (Preset Search Function).



Press momentarily
1 → 2 → ··· → 5 → 6 → 1 → ···



Press momentarily
1 → 6 → 5 → ··· → 2 → 1 → ···

EN

5

RDS Functions

Overview of the RDS Function

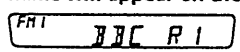
RDS (Radio Data System) is a system which uses FM radio waves to receive digital signals. Receiving RDS data with your car stereo unit allows it to use a variety of services. There are several ways to use these services. For instance, you can receive information such as traffic announcements and station names, or you can cause the unit to automatically retune to the strongest signal that is broadcasting the same program. So even if you travel a long distance, it is still possible to listen to the same program without having to retune manually again and again. Another function allows it to receive traffic announcements during cassette playback.
RDS offers various functions, but depending on the country or region, not all of these are available. Following information explains the RDS functions of this unit.

Notes
- *In case of weak signals or other poor reception conditions, the RDS functions may not work properly.*
- *If the FM station currently received does not transmit RDS data, the functions described below will not work.*

Displaying the Station Name

By using RDS data, the name of the station currently received can be displayed.

Select an FM station. → If it is a station transmitting RDS data, the station name will appear on the display.



When "*" appears in addition to the usual frequency indication, an RDS station is being received.

Changing the displayed items
Each time you press the DISPLAY button, the displayed items change as follows:

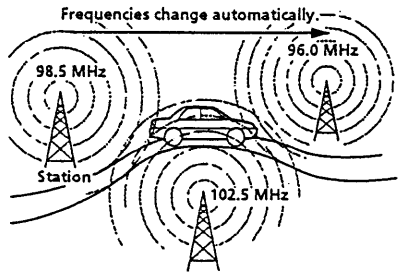
→ Frequency → Time → Station Name →

When "--------" is displayed instead of the station name, the currently received station does not transmit RDS data. After some seconds, "--------" will disappear, and the frequency will be displayed.

Listening to the same Programme without Manual Retuning even if the Location has changed

— AF Function

Using "AF" (List of Alternative Frequencies), to automatically tune to that frequency among the frequencies of the currently received station, which carries the strongest signal in the respective region. As result, you can continuously listen to the same programme during a long-distance drive without repeated manual retuning.



1 Select an FM station.

2 Press the [AF/TA] button to get "AF" displayed.

The unit begins to search for an alternative station with a stronger signal in the same network from the AF data

Notes
- *When the currently received frequency is weak and the same programme cannot be received with another frequencies, "NO AF" will be indicated.*
- *When automatic tuning (page 7) is activated while "AF" is displayed, only FM stations which transmit RDS data will be received.*
- *When you press the AF/TA button while an MW or LW station is received, FM1 will be automatically selected.*

EN

Radio Reception/RDS Functions

Getting the Stored RDS Stations tuned in from the Broadcasting Networks

When the unit stores an RDS station transmitting the AF data on a preset number button, it stores not only its frequency but also its AF and PI (Program Identification) data. The unit will store this data in its memory no matter whether the AF function is ON or OFF. Using the AF function, you can select a better signal station by retuning within the same broadcasting network of the memorized station.

Press the [AF/TA] button to get "AF" displayed, then press the preset number button.

If by the AF data no other station can be found in the network of the memorized station, "PI seek" will be displayed, and the unit searches for a station with the same PI data. If the unit finds no other station with the same PI data, it will return to the original station.

EN

Listening to a Regional Program

Press the [AF/TA] button for more than two seconds. → "REG" appears on the display.

To cancel, press again for more than two seconds.

Note
The initial setting is "Regional ON".

This function cannot be activated in the United Kingdom and some other areas.

Local Link Function (United Kingdom only)
When local stations stored on the preset number buttons are poorly received, or when you want to change to another local station, use this function to activate automatic search for other local stations and to tune to them one by one. Within five seconds after its reception started, press the preset number button of the local station you want to change, and keep the button pressed. Repeat this procedure several times until the desired local station is received.

Storing only RDS stations
The BTM function (page 7) allows it to store only RDS stations on the preset number buttons; activate the AF function, then press the BTM button for two seconds. When "AF OFF" is displayed and you activate BTM, the unit will store only stations not transmitting RDS data.

Listening to Traffic Announcements

By using TA (Traffic Announcement) and TP (Traffic Program) data, a station broadcasting traffic announcements can be automatically received. Even during cassette playback you can hear traffic announcements, as the unit continues searching for such a station, and will automatically change to FM reception when a traffic announcement starts.

Press the [AF/TA] button to get "TA" displayed. → The unit will start to search for traffic information stations.
When a station transmitting a traffic announcement is found, "TP" will be displayed. During reception of the announcement, the "TA" indication will blink. The blinking will stop when the traffic announcement is over.

The TA function works also during cassette playback.
Press the [AF/TA] button during cassette playback. → "TA" appears on the display.
The unit will start to search for traffic announcements. When an announcement is received, cassette playback will stop, and the traffic information can be heard.
In case you press the [AF/TA] button while an MW or LW station is received, the unit will automatically change to FM reception.

Cancelling the Currently Received Traffic Announcement
Press the AF/TA button momentarily.

Cancelling the TA mode
Press the AF/TA button until "AF/TA OFF" appears on the display.

Note
If no traffic information stations can be received, "NO TP" will blink for about four seconds, and then the search for other stations transmitting traffic announcements will start.

Each time you press the AF/TA button, the display on the display window changes as follows:

AF ON → TA ON → AF/TA ON → AF/TA OFF →

The "EON" Indication
When both "TA" and "EON" are displayed, this means that in addition to the currently received station, another station is also broadcasting a traffic announcement.

Presetting the Volume of Traffic Announcements

It is possible to hear the traffic announcements at a previously set volume level. For example, even if volume is turned to zero, it will automatically change to the preset level when a traffic announcement starts. (In case the current volume level is higher than the preset level, the current level will not change.)

1 Select an FM station and the desired volume level.

2 Press button [3 ∞] while pressing the [SEL] button.
When you hear a beep tone, the setting is completed.

Receiving Emergency Announcements
In case of danger through an emergency or a natural disaster, RDS stations transmit emergency announcements to warn the drivers in that area. Such announcements can be received only when the AF or TA functions are activated. When an emergency announcement is received, cassette playback will stop, the unit will automatically change to FM, and the information can be heard.

Selecting the Programme Type

Some stations use RDS to distinguish the types of their programmes during broadcasting.

There are following programme types:

Programme types	Display
News	NEWS
Current Affairs	AFFAIRS
Information	INFO
Sport	SPORT
Education	EDUCATE
Drama	DRAMA
Culture	CULTURE
Science	SCIENCE
Varied	VARIED
Pop	POP M
Rock	ROCK M
Middle of the Road	M.O.R. M
Light Classical	LIGHT M
Serious Classics	CLASSICS
Other Music Types	OTHER M
Not specified *(when the station does not specify the programme type)*	NONE

1 Press the [PTY] button during FM reception. → "PTY" appears on the display.
If the currently received station is transmitting PTY (programme type selection) data, one of above-shown programme type names will be displayed. If the currently received station is no RDS station, or if the RDS data has not been read, "- - - - - - - - " will be displayed. In this case, you can select "NEWS" or other programme types by pressing the PTY button.

PTY NEWS

2 Press again within five seconds.
The programme types will be displayed in the order shown above.

PTY SPORT

3 When the desired programme type is displayed, press the either side of the SEEK/AMS button. → "SEARCH" will blink in the display.
The unit will search for station broadcasting this programme type.

PTY SEARCH

4 When a programme of the desired type is received, the programme type will again appear in the display for five seconds.

PTY SPORT

If the desired programme type cannot be found, "NO DATA" will be displayed for five seconds, and the unit returns to the previous station (programme).

PTY NO DATA

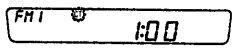
Notes
- The PTY function may not be activated immediately after the unit is used for the first time. This is because the unit has not yet memorized some of the RDS data necessary to utilize the PTY function.

EN

Using RDS Data for Setting the Clock Automatically

By receiving CT (Clock Time) data, the clock of this unit can be set automatically.

During FM reception, press the [2 REP] button while pressing the [SEL] button. → "CT" will be displayed, and the clock will be set.



To cancel the CT function, press these buttons again.

Notes

- *The CT function may not work even though an RDS station is being received.*
- *The time set by the CT function may not be exact.*

EN

Other Functions

Adjusting the Sound Characteristics

1 **Select the item you want to adjust by pressing the [SEL] button repeatedly.**

VOL (volume) → BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume)

2 **Adjust the selected item by pressing either the [+] or [−] button.**

Adjust within three seconds after selecting. (After three seconds the button will again serve as volume control button.)

Enjoying Bass and Treble even at Low Volume

— Loudness Function

Press the [LOUD] button. → "LOUD" will appear on the display.
Bass and treble will be reinforced. To cancel, press again.

Muting the Sound Quickly

— Mute Function

Press the [MUTE] button. → The "MUTE" indication flashes.
The sound is muted at once. To restore the previous volume level, press again.

This function will be also cancelled when:

- *— the [+] or OFF button is pressed.*
- *— ejecting a cassette by pressing the ⏏ button during tape playback.*

Muting the Beep Tone

Press the [6 BEEP] button while pressing the [SEL] button.

To reobtain the beep tone, press these buttons again.

Changing the Illumination Color

Press the [1 INTRO] button while pressing the [SEL] button.
You can choose the color between amber and green.

Maintenance

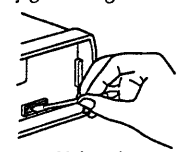
Fuse Replacement

When replacing the fuse, be sure to use one with the correct amperage which is stated on the fuse case. Never use a fuse whose amperage rating exceeds the one supplied to the unit as this could cause a malfunction of the unit.

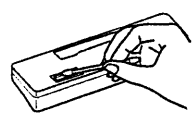
Warning
Use a fuse with the specified amperage.
Use of a fuse with higher amperage may cause serious damage.

Cleaning the Connectors

The unit may not function properly if the connectors between the unit and the front panel are not clean. In order to prevent this, open the front panel by pressing the RELEASE button, then detach it and clean with a cotton swab which was dipped in alcohol. Do not apply too much force. Otherwise, the connector may get damaged.



Main unit



Back of the front panel

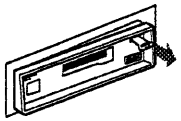
EN

RDS Functions/Other Functions

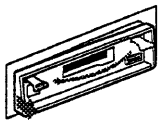
Dismounting the Unit

1

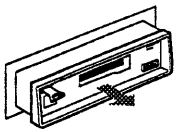
2



3

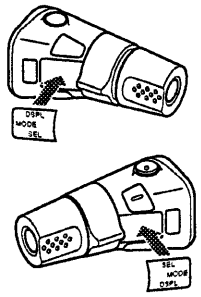


4



The Rotary Commander Labels

This unit can be used with the separately available optional the rotary commander (RM-X2S).
Four button name labels are supplied with the rotary commander. Attach that label which matches the functions of the master unit and the installing position of the rotary commander.
In case you connect this unit, attach the label which has "DSPL" on it.



Attach the appropriate label for the installing position of the rotary commander.

EN

8

Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all ground wires to a common ground point.**

If Your Car has No Accessory Position on the Ignition Key Switch — POWER SELECT Switch

The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear if **your car has no accessory position on the ignition key switch.** To avoid this battery wear, **set the POWER SELECT switch located on the bottom of the unit to the ⏻ position, then press the reset button.** The illumination is reset to stay off while the unit is not being played.

Note

The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the ⏻ position.

Connexions

Précautions

- Cet appareil est conçu pour fonctionner sur courant continu de 12 V avec masse négative.
- Avant d'effectuer les connexions, débrancher la borne de terre de la batterie du véhicule pour éviter tout court-circuit.
- Brancher les fils d'entrée d'alimentation **jaune** et **rouge** seulement après avoir terminé tous les autres branchements.
- Veiller à ne pas raccorder le fil rouge d'entrée d'alimentation à la borne positive de 12 V qui est alimentée quand la clé de contact est sur la position accessoire.
- **Rassembler tous les fils de terre en un point de masse commun.**

Si l'appareil est utilisé dans une voiture dont la clé de contact n'a pas de position accessoires — Interrupteur POWER SELECT

L'éclairage du panneau avant est réglé en usine de manière à s'allumer même quand l'appareil ne fonctionne pas. Cependant, ce réglage risque d'épuiser la batterie si **l'appareil est utilisé dans une voiture dont la clé de contact ne possède pas de position accessoires.** Pour éviter d'épuiser la batterie, régler l'interrupteur **POWER** sur **la** socle de **l'appareil sur la position ⏻, puis appuyer sur la touche de réinitialisation.** L'éclairage est réglé pour rester éteint quand l'appareil n'est pas utilisé.

Remarque

Quand l'interrupteur POWER SELECT est réglé sur la position ⏻, l'avertisseur du panneau avant ne fonctionne pas.

Anschluß

Vorsicht

- Dieses Gerät ist ausschließlich für eine negativ geerdete 12-V-Autobatterie bestimmt.
- Trennen Sie vor dem Anschließen des Geräts die Erdungsklemme der Batterie ab, um einen Kurzschluß zu vermeiden.
- Schließen Sie das **gelbe** und **rote** Stromversorgungskabel erst an, wenn alle anderen Kabel bereits angeschlossen sind.
- Leiten Sie das rote Stromversorgungskabel an einen positiven 12-V-Kontakt, an dem Spannung anliegt, wenn sich das Zündschloß in der Position I bzw. ACC (Position vor der Zündposition) befindet.
- **Schließen Sie alle Erdungskabel an einen gemeinsamen Massepunkt an.**

Wenn das Zündschloß Ihres Wagens keine Position I bzw. ACC besitzt — POWER SELECT-Schalter

Das Gerät ist werkseitig so voreingestellt, daß das Bedienfeld auch dann beleuchtet ist, wenn das Gerät nicht betrieben wird. Besitzt das Zündschloß Ihres Fahrzeugs **keine Position I bzw. ACC, so ist die Beleuchtung ständig eingeschaltet** und entzieht der Batterie Strom. Stellen Sie in einem solchen Fall **den POWER SELECT-Schalter an der Unterseite des Geräts auf Position B, und drücken Sie dann die Rücksetztaste.** Bei ausgeschaltetem Gerät ist das Bedienfeld dann nicht mehr beleuchtet.

Hinweis

Der Warnton für die Frontplatte ertönt nicht, wenn der POWER SELECT-Schalter auf Position ⏻ gestellt ist.

Collegamenti

Attenzione

- Questo apparecchio è stato progettato per l'uso solo a 12 V CC con massa negativa.
- Prima di eseguire i collegamenti, scollegare il terminale di massa della batteria dell'auto per evitare cortocircuiti.
- Collegare i cavi di collegamento alimentazione **rosso** e **giallo** solo dopo aver collegato tutti gli altri cavi.
- Assicurarsi di collegare il cavo rosso di collegamento alimentazione al terminale di alimentazione 12 V positivo che è sotto tensione quando la chiavetta di accensione è in posizione accessoria.
- **Portare tutti i cavi di massa a un punto di massa comune.**

Quando si usa l'apparecchio in un'auto priva di posizione accessoria per la chiavetta di accensione — Interruttore POWER SELECT

L'illuminazione del pannello anteriore è stata predisposta in fabbrica per l'attivazione anche quando non si usa l'apparecchio. Tuttavia questa regolazione può causare scaricamento della batteria dell'auto se si usa **l'apparecchio in un'auto priva di posizione accessoria per la chiavetta di accensione.** Per evitare ciò, **regolare su ⏻ l'interruttore POWER SELECT situato alla base dell'apparecchio e quindi premere il tasto di azzeramento.** L'illuminazione rimane così spenta finché l'apparecchio rimane spento.

Nota

La sumeria di attenimento per il pannello anteriore non si attiva quando l'interruttore POWER SELECT è in posizione ⏻.

Conexiones

Precauciones

- Esta unidad ha sido diseñada para alimentarse con 12 V CC, negativo a masa, solamente.
- Antes de realizar las conexiones, desconecte el conductor de puesta a masa de la batería del automóvil a fin de evitar cortocircuitos.
- Conecte los cables conectores de alimentación **amarillo** y **rojo** solamente después de haber conectado los demás.
- Cerciórese de conectar el cable conector de alimentación rojo a un terminal de 12 V positivo que se energice al poner la llave de encendido en la posición para accesorios.
- **Conecte todos los conductores de puesta a masa a un punto común.**

Si el automóvil no dispone de posición para accesorios en la llave de encendido — Selector POWER SELECT

La iluminación del panel frontal ha sido ajustada en fábrica para que esté activada aunque la unidad no se encuentre en reproducción. Sin embargo, este ajuste puede provocar cierta descarga de la batería del automóvil **si éste no dispone de posición para accesorios en la llave de encendido.** Para evitar esto, **ponga el selector POWER SELECT, situado en la base de la unidad, en la posición ⏻ y, después, presione el botón de reposición.** La iluminación estará desactivada cuando la unidad no se encuentre en reproducción.

Nota

La alarma de precaución del panel frontal no se activará cuando el selector POWER SELECT se encuentre en la posición ⏻.

Connexions

Advertência

- Este aparelho foi projectado para funcionar somente com 12 V CC, terra negativa.
- Antes de efectuar as ligações, desligue o terminal terra da bateria do automóvel para evitar curto-circuitos.
- Ligue os fios **vermelho** e **amarelo** de ligação de alimentação somente após a ligação de todos os outros fios.
- Não se esqueça de ligar o fio vermelho de ligação da alimentação ao terminal de alimentação 12V positivo, que tem energia quando a chave de ignição se encontra na posição acessórios.
- **Ligue todos os fios de terra num ponto comum na carroçaria.**

Se o seu automóvel não estiver equipado com uma chave de ignição com posição acessórios — Interruptor POWER SELECT

A iluminação do painel frontal é regulada na fábrica para se manter acesa, mesmo quando o aparelho não estiver ligado. No entanto, esta regulação pode provocar a descarga da bateria se **o aparelho for utilizado em automóveis sem chave de ignição com posição acessórios.** Para evitar a descarga da bateria, **regule o interruptor POWER SELECT, situado na base do aparelho, para a posição ⏻. Em seguida, carregue no botão de reinicialização.** A iluminação é regulada para ficar apagada enquanto o aparelho estiver desligado.

Nota

O alarme de advertência do painel frontal não é activado quando o interruptor POWER SELECT estiver regulado para a posição ⏻.

Aansluitingen

Let op!

- Dit apparaat is ontworpen voor gebruik op gelijkstroom van **een 12 Volts auto-accu, negatief geaard.**
- Alvorens te beginnen met het maken van aansluitingen, dient de aardkiem van de auto-accu te worden losgemaakt. Dit om kortsluiting te voorkomen.
- Sluit **de gele en rode** stroomdraden pas aan nadat alle andere aansluitingen zijn gemaakt.
- Zorg ervoor dat de rode stroomdraad op de positieve 12 V accu-aansluiting wordt aangesloten. De draad komt dan onder spanning te staan wanneer de contactsleutel wordt omgedraaid in de stand "ACC".
- **Sluit alle aarddraden op een gemeenschappelijk aardpunt aan.**

Wanneer het contactslot van uw auto geen "accessory" stand heeft — POWER SELECT schakelaar

De verlichting op het voorpaneel is in de fabriek zo ingesteld dat ze aangaat wanneer de contactsleutel wordt omgedraaid, ook al gebruikt u het apparaat niet. **Dit kan echter leiden tot onnodige uitputting van de accu wanneer het contactslot van uw auto geen "accessory" stand heeft.** Om dit te vermijden, **zet u de POWER SELECT schakelaar aan de onderkant van het apparaat op B en drukt u vervolgens op de terugstelknop.** De verlichting zal nu uitblijven als het apparaat niet wordt gebruikt.

Opmerking

Als de POWER SELECT schakelaar op ⏻ staat, zal het waarschuwingssignaal voor het voorpaneel niet functioneren.

Anslutning

Observera

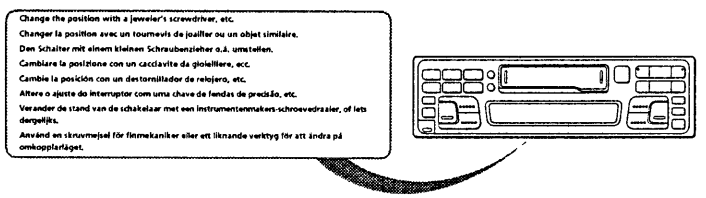
- Denna bilstereo är endast avsedd för anslutning till ett negativt jordat, 12 V bilbatteri.
- Innan du ansluter bilstereon bör du koppla ur kabeln från bilbatteriets jordpol för att förebygga kortslutningar.
- Anslut den **gula** och den **röda** strömkabeln allra sist efter att du har anslutit övriga kablar.
- Var noga med att ansluta den röda strömkabeln till det positiva 12 volts strömuttag som blir spänningsförande när tändläget vrids till strömläget.
- **Dra samtliga jordledningar till en och samma jordningspunkt.**

Montera bilstereon i en bil vars tändlås inte har något strömläge — Omkopplaren POWER SELECT

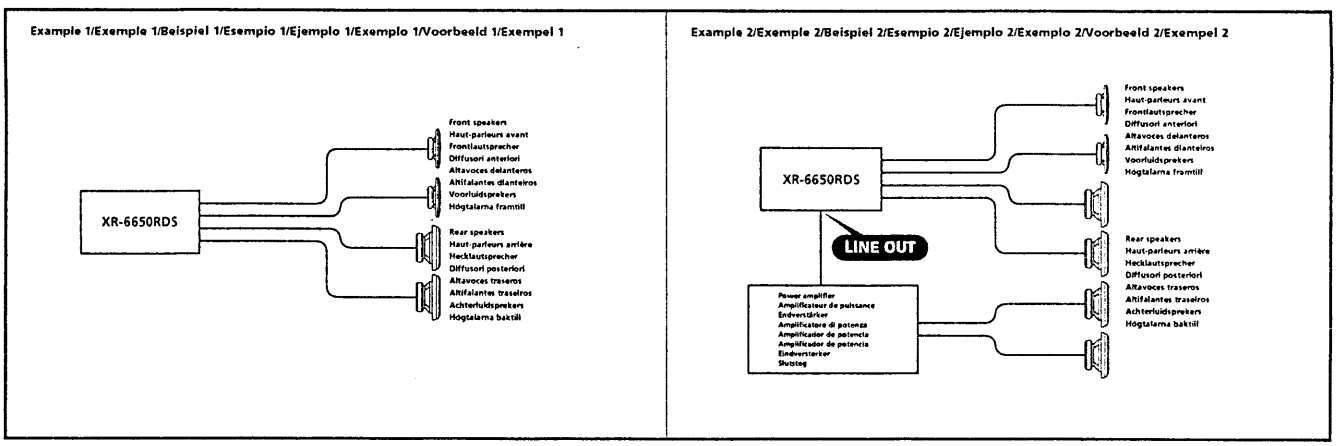
Innan bilstereon levererades från fabriken ställdes belysningen i teckenfönstret in så att den lyser också när bilstereon inte används. Detta kan emellertid orsaka urladdning av batteriet när du använder bilstereon i **en bil, vars tändlås saknar läget ACC (strömläge). Skjut omkopplaren POWER SELECT på bilstereons undersida till läge ⏻, och tryck sedan på återställningsknappen** för att undvika att bilbatteriet laddas ur. Nu lyser inte längre belysningen i teckenfönstret när bilstereon inte används.

Observera

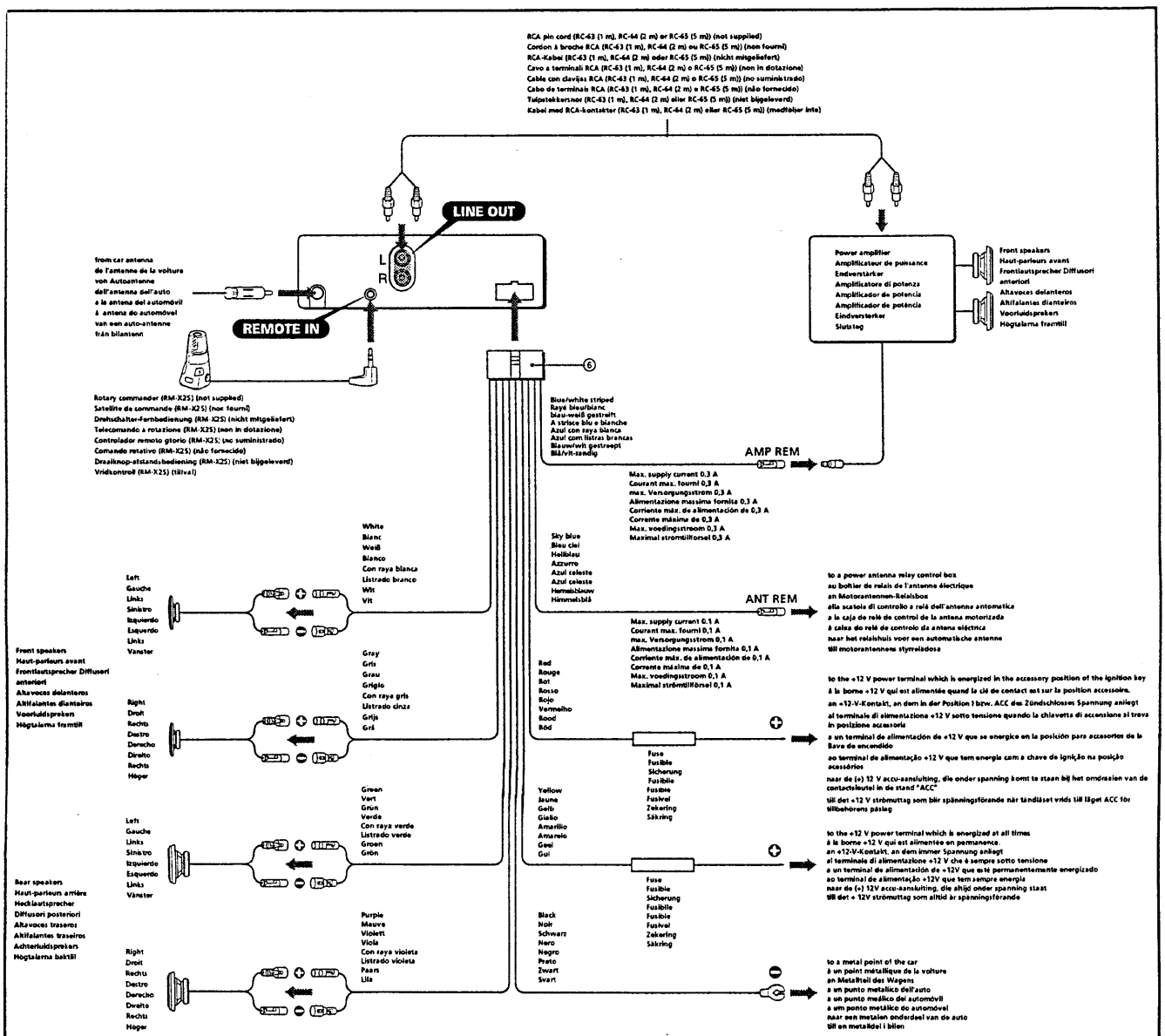
Varningssignalen, som varnar om du inte har tryckt loss frampanelen, fungerar inte när omkopplaren POWER SELECT står i läge ⏻.


Change the position with a jeweler's screwdriver, etc.
Changer la position avec un tournevis de joaillier ou un objet similaire.
Den Schalter mit einem kleinen Schraubenzieher o.ä. umstellen.
Cambiare la posizione con un cacciavite da gioiellieri, ecc.
Cambie la posición con un destornillador de relojero, etc.
Altere o ajuste do interruptor com uma chave de fendas de precisão, etc.
Verander de stand van de schakelaar met een instrumentenmakers-schroevedraaier, of iets dergelijks.
Använd en skruvmejsel för finmekaniker eller ett liknande verktyg för att ändra på omkopplarläget.

Connection Diagram — Schémas de connexion — Anschlußdiagramm — Schema di collegamento — Diagrama de conexiones — Diagrama de ligações — Aansluitschema — Kopplingsschema



Connections of Example / Connexions de l'exemple / Anschlußbeispiel / Collegamenti per l'esempio / Ejemplo de conexiones / Exemplo de ligações / Voorbeeldaansluitingen / Anslutningarna enligt exempel



Notes on the control leads
- The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner or when you activate the ATA (Automatic Tuner Activation), AF (Alternative Frequencies) or the TA (Traffic Announcement) function.
- A power antenna without relay box cannot be used with this unit.

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection
- Before connecting the speakers, turn the unit off.
- Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.
- Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.
- Do not attempt to connect the speakers in parallel.
- Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.

Remarques sur les fils de contrôle
- Le fil de contrôle de l'antenne électrique (bleu) fournit du courant continu de +12 V quand le tuner est allumé ou quand la fonction ATA (Automatic Tuner Activation), AF (Fréquences alternatives) ou TA (Informations routières) est mise en service.
- Une antenne électrique sans boîtier de relais ne peut pas être utilisée avec cet appareil.

Connexion pour la conservation de la mémoire
Lorsque le fil d'entrée d'alimentation jaune est connecté, le circuit de la mémoire est alimenté en permanence même si la clé de contact est sur la position d'arrêt.

Remarques sur la connexion des haut-parleurs
- Avant de raccorder les haut-parleurs, mettre l'appareil hors tension.
- Utilisez des haut-parleurs ayant une impédance de 4 à 8 ohms et une capacité adéquate sous peine de les endommager.
- Ne pas raccorder les bornes du système de haut-parleurs au châssis de la voiture et ne pas connecter les bornes du haut-parleur droit à celles du haut-parleur gauche.
- Ne pas tenter de raccorder les haut-parleurs en parallèle.
- Ne pas raccorder des haut-parleurs actifs (avec amplificateurs intégrés) aux bornes de haut-parleur de l'appareil sous peine de les endommager. Veiller à raccorder des haut-parleurs passifs à ces bornes.

Hinweise zu den Steuerleitungen
- Die (blaue) Motorantennen-Steuerleitung liefert eine Gleichspannung von +12 V, wenn der Tuner eingeschaltet, die ATA-Funktion (Automatic Tuner Activation), die AF-Funktion (Alternative Frequency) oder die TA-Funktion (Traffic Announcement) aktiviert ist.
- Eine Motorantenne ohne Relaisbox kann nicht angeschlossen werden.

Zur Stromversorgung des Speichers
Wenn das gelbe Stromversorgungskabel angeschlossen ist, wird der Speicher stets (auch bei ausgeschaltetem Zündschloß) mit Strom versorgt.

Hinweise zum Lautsprecheranschluß
- Schalten Sie das Gerät aus, bevor Sie die Lautsprecher anschließen.
- Verwenden Sie Lautsprecher mit einer Impedanz zwischen 4 und 8 Ohm und ausreichender Belastbarkeit. Ansonsten können die Lautsprecher beschädigt werden.
- Verbinden Sie die Lautsprecheranschlüsse nicht mit dem Wagenchassis, und verbinden Sie auch nicht die Anschlüsse des rechten mit denen des linken Lautsprechers.
- Versuchen Sie nicht, Lautsprecher parallel anzuschließen.
- An die Lautsprecheranschlüsse dieses Geräts dürfen nur Passivlautsprecher angeschlossen werden. Schließen Sie keine Aktivlautsprecher (Lautsprecher mit eingebauten Verstärkern) an, da diese somit beschädigt werden können.

Nota sui cavi di collegamento
- Il cavo di controllo dell'antenna automatica (blu) fornisce +12 V CC quando si accende il sintonizzatore o quando si attiva la funzione ATA (Automatic Tuner Activation), la funzione AF (frequenze alternative) o la funzione TA (notiziari sul traffico).
- Non è possibile usare un'antenna automatica senza la scatola a relè con questo apparecchio.

Collegamento per la conservazione della memoria
Quando il cavo di ingresso alimentazione giallo è collegato, viene sempre fornita alimentazione al circuito di memoria anche quando la chiavetta di accensione è spenta.

Nota sul collegamento dei diffusori
- Prima di collegare i diffusori spegnere l'apparecchio.
- Usare diffusori di impedenza compresa tra 4 e 8 ohm e con capacità di potenza adeguata, altrimenti i diffusori possono essere danneggiati.
- Non collegare i terminali del sistema diffusori al telaio dell'auto e non collegare i terminali dei diffusore destro e quelli dei diffusore sinistro.
- Non collegare i diffusori in parallelo.
- Non collegare alcun diffusore attivo (con amplificatore incorporato) ai terminali diffusori dell'apparecchio perché questo può danneggiare i diffusori attivi. Assicurarsi di collegare diffusori passivi a questi terminali.

Notas sobre conductores de control
- El conductor de control de la antena motorizada (azul) suministrará +12 V CC cuando conecte la alimentación del sintonizador o cuando active la función de activación automática del sintonizador (ATA), frecuencia alternativa (AF) o anuncios de tráfico (TA).
- con esta unidad no podrá emplearse una antena motorizada desprovista de caja de relé.

Conexión para protección de la memoria
Si conecta el conductor de entrada amarillo, el circuito de la memoria recibirá siempre alimentación, incluso aunque apague la llave de encendido en la posición OFF.

Notas sobre la conexión de los altavoces
- Antes de conectar los altavoces, desconecte la alimentación de la unidad.
- Utilice altavoces con una impedancia de 4 a 8 ohmios, y con la potencia máxima admisible adecuada, ya que de lo contrario podría dañarlos.
- No conecte los terminales del sistema de altavoces al chasis del automóvil, ni los del altavoz izquierdo a los del derecho.
- No intente conectar los altavoces en paralelo.
- No conecte altavoces activos (con amplificador incorporado) a los terminales de altavoces de la unidad. Si lo hiciese, podría dañar tales altavoces. Por lo tanto, asegúrese de conectar altavoces pasivos a estos terminales.

Notas sobre os fios de controlo
- O fio de controlo da antena eléctrica (azul) fornece +12 V CC quando da ligação do sintonizador ou da activação da função ATA (Activação automática do sintonizador), AF (Frequências Alternativas) ou TA (Boletins de Tráfego).
- Uma antena eléctrica sem um relé não pode ser utilizada com este aparelho.

Ligação para alimentação contínua da memória
Quando, o fio amarelo de entrada de alimentação for ligado, os circuitos de memória ficarão com alimentação contínua, mesmo se a chave de ignição estiver desligada.

Notas sobre a ligação dos altifalantes
- Antes de ligar os altifalantes, desligue o aparelho.
- Utilize altifalantes com impedância de 4 a 8 ohm, e com capacidade adequada(s) de potência adequada. Caso contrário, os altifalantes poderão sofrer avarias.
- Não ligue os terminais do sistema de altifalantes ao chassis do automóvel, e não ligue os terminais do altifalante direito aos terminais do altifalante esquerdo.
- Não tente ligar os altifalantes em paralelo.
- Não ligue nenhum sistema de altifalantes activos (com amplificadores incorporados) aos terminais dos altifalantes do aparelho. Caso o faça, poderá avariar o sistema de altifalantes activos. Portanto, não se esqueça de ligar altifalantes passivos a estes terminais.

Opmerkingen betreffende de aansluitsnoeren
- Het aansluitsnoer voor de automatische antenne (blauw) levert +12 V gelijkstroom als de tuner wordt ingeschakeld of als de functie ATA (Automatic Tuner Activations), AF (Alternatieve Frequenties) of TA (Traffic Announcement) wordt geaktiveerd.
- Met dit apparaat si het niet mogelijk een automatische antenne zonder relaishuis te gebruiken.

Instandhouden van het geheugen
Zolang de gele stroomdraad is aangesloten, blijft de stroomverzorging van het geheugen intact, ook wanneer het contact van de auto wordt uitgeschakeld.

Opmerkingen betreffende het aansluiten van de luidsprekers
- Zorg dat het apparaat is uitgeschakeld, alvorens de luidsprekers aan te sluiten.
- Gebruik luidsprekers met een impedantie van 4 tot 8 Ohm en let op dat die het vermogen van de versterker kunnen verwerken. Als dit wordt verzuimd, kunnen de luidsprekers ernstig beschadigd raken.
- Verbind in geen geval de aansluitingen van de luidsprekers met het chassis van de auto en sluit de aansluitingen van de rechter- en linker luidspreker niet op elkaar aan.
- Probeer nooit de luidsprekers parallel aan te sluiten.
- Sluit geen actieve luidsprekers (met ingebouwde versterkers) aan op de luidsprekeraansluiting van dit apparaat. Dit zal leiden tot beschadiging van de actieve luidsprekers. Sluit dus altijd uitsluitend luidsprekers zonder ingebouwde versterker aan.

Att observera angående de olika styrkablarna
- Motorantennes styrkabel ANT REM (blå) leder 12 volts likström när bilradion slås på eller när radiomottagningsautomatiken ATA automatiskt slår på bilradion, alternativ frekvenser (AF) eller trafikmeddelanden (TA).
- En motorantenn utan elgrytreläbox kan inte anslutas till denna bilstereo.

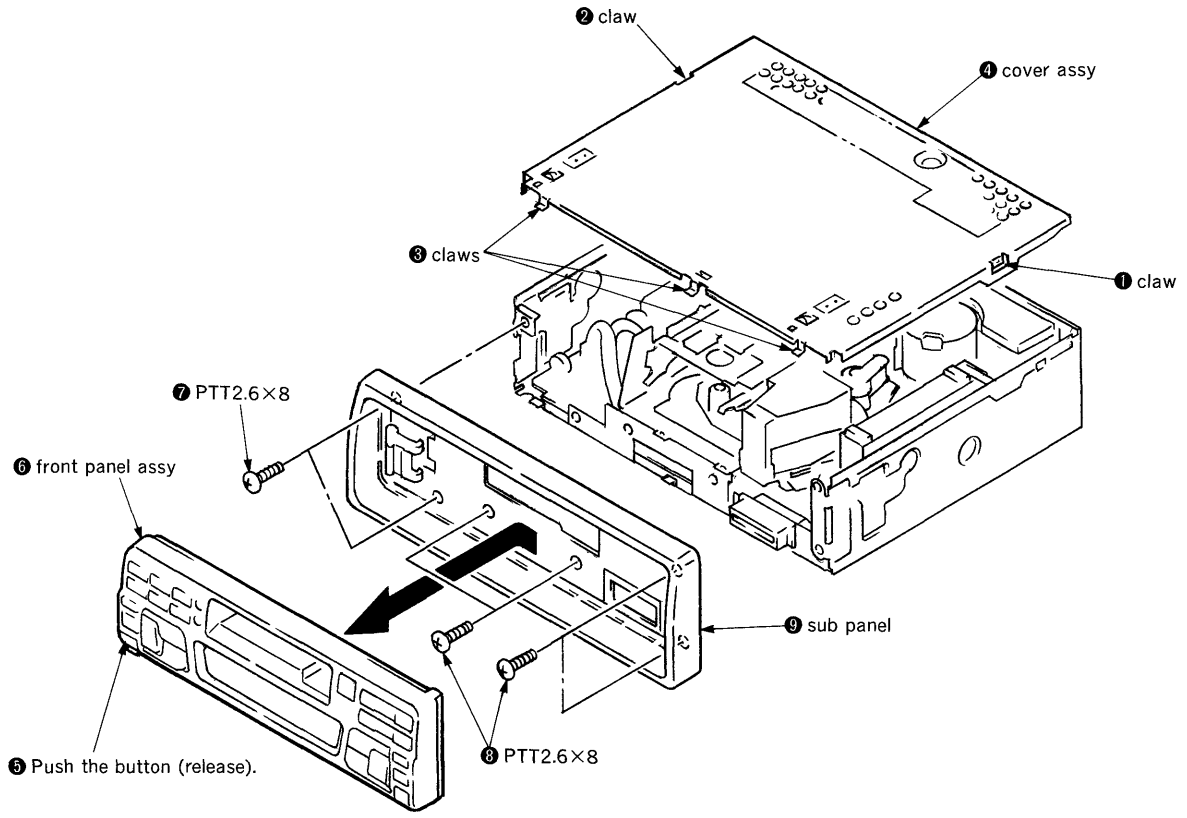
Anslutning för minnesstöd
När den gula, ingående strömkabeln ansluts strömförsörjs alltid minneskretsen, även när tändläget slås ifrån.

Att observera angående högtalarnas anslutning
- Slå av bilstereon innan du ansluter högtalarna.
- Använd endast högtalare, vars impedanser ligger från 4 till 8 ohm och som har tillräcklig effektionteringskapacitet för att skydda högtalarna mot skador.
- Anslut inte någon av högtalarledningen till bilens underrede. Anslut inte heller ihop- gen av högtalarledningen till ihopgen på insatser högtalare.
- Anslut inte högtalare parallellt.
- Anslut inte aktiva högtalare (med inbyggda slutsteg) till bilstereons högtalaruttag, eftersom de kan skada de aktiva högtalarna.
Var noga med att bara anslöta passiva högtalare till dessa uttag.

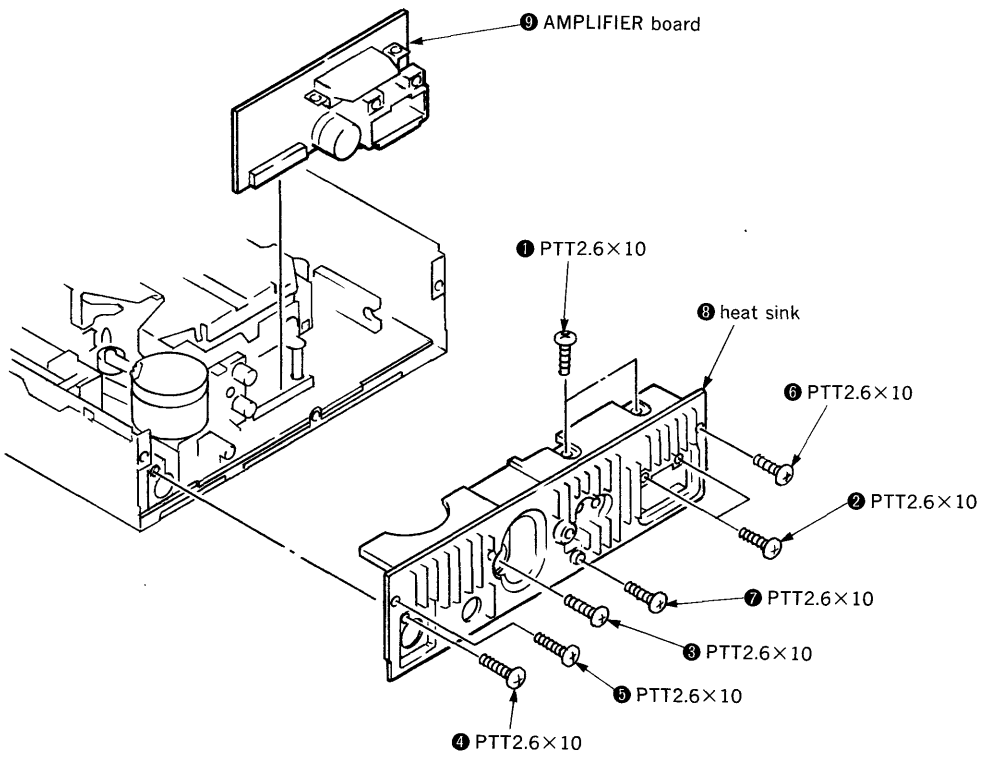
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in numerical order given.

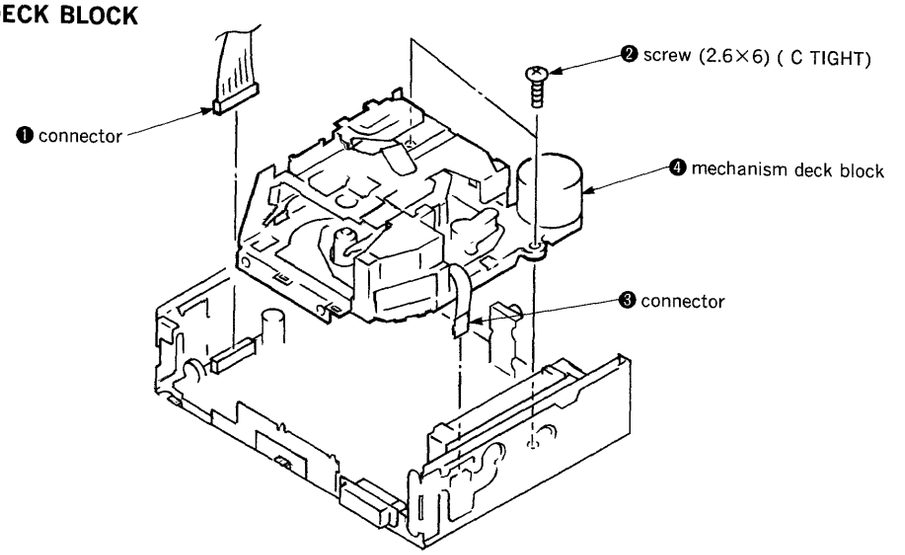
2-1. SUB PANEL



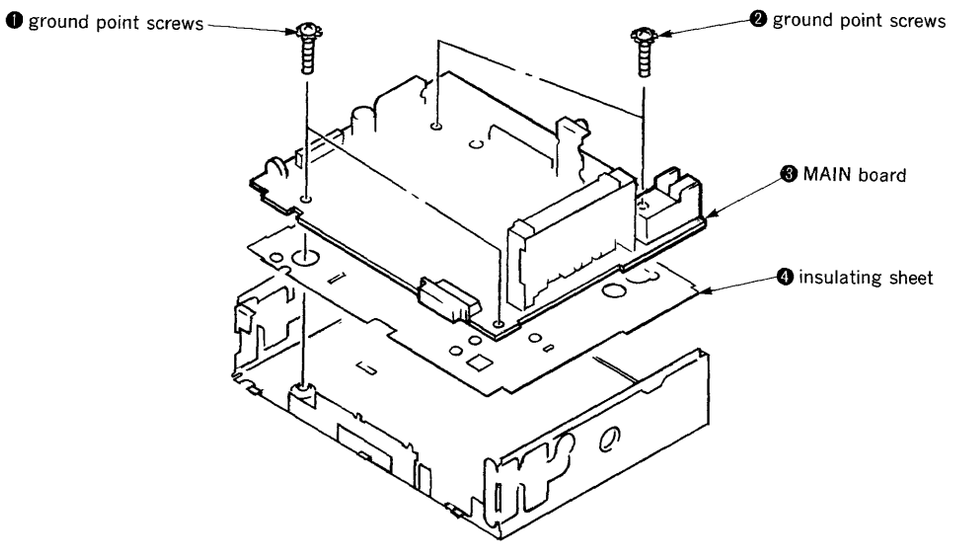
2-2. AMPLIFIER BOARD



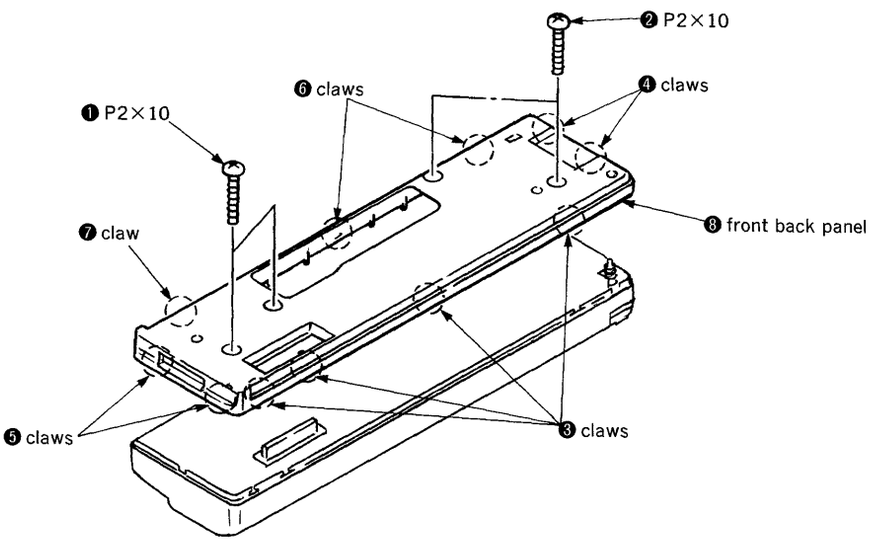
2-3. MECHANISM DECK BLOCK



2-4. MAIN BOARD



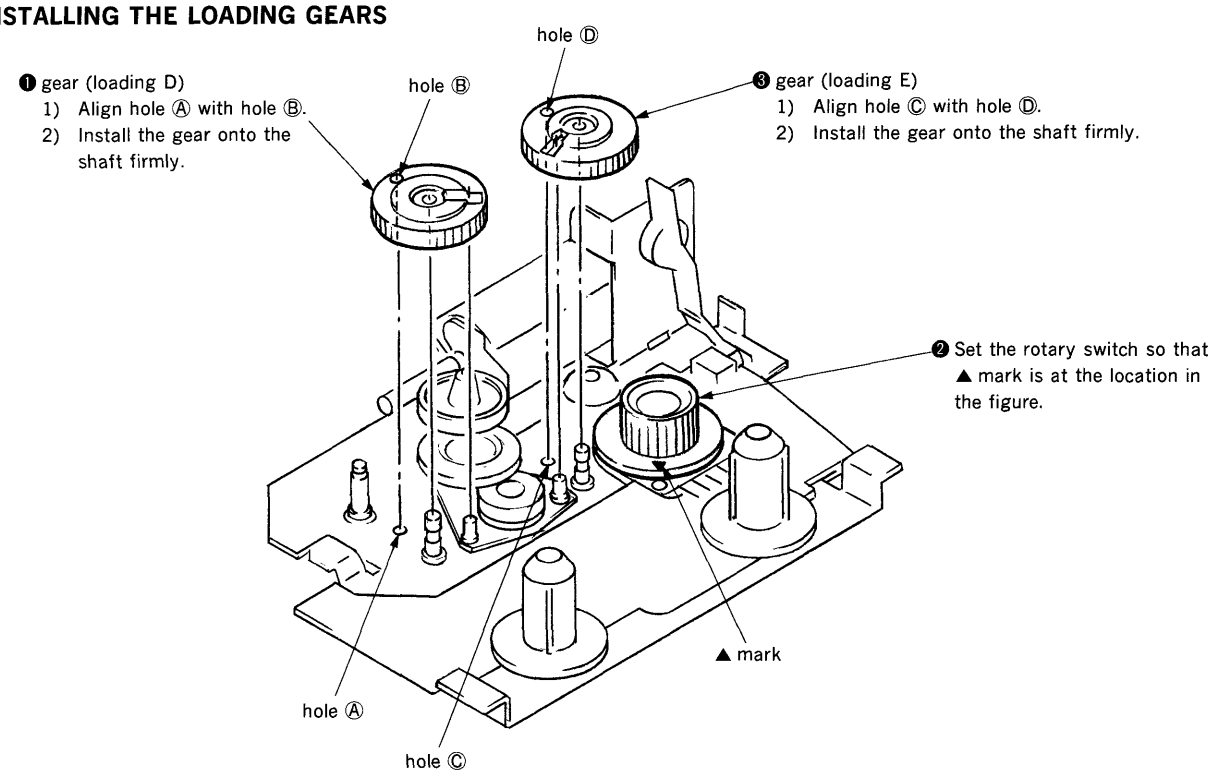
2-5. FRONT BACK PANEL



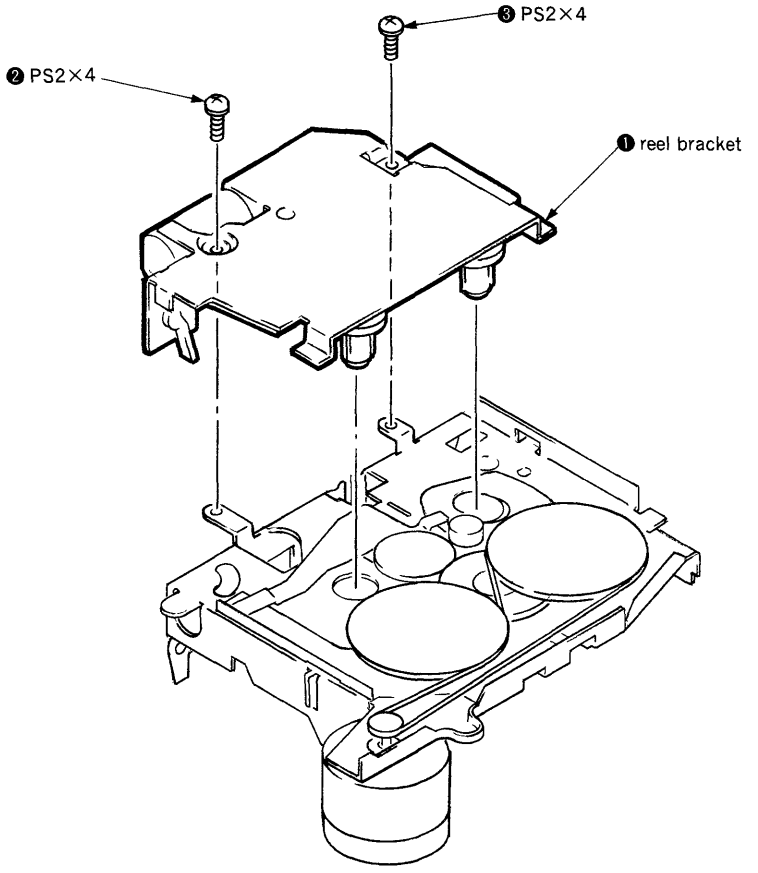
SECTION 3
ASSEMBLY OF MECHANISM DECK

Note : Follow the assembly procedure in the numerical order given.

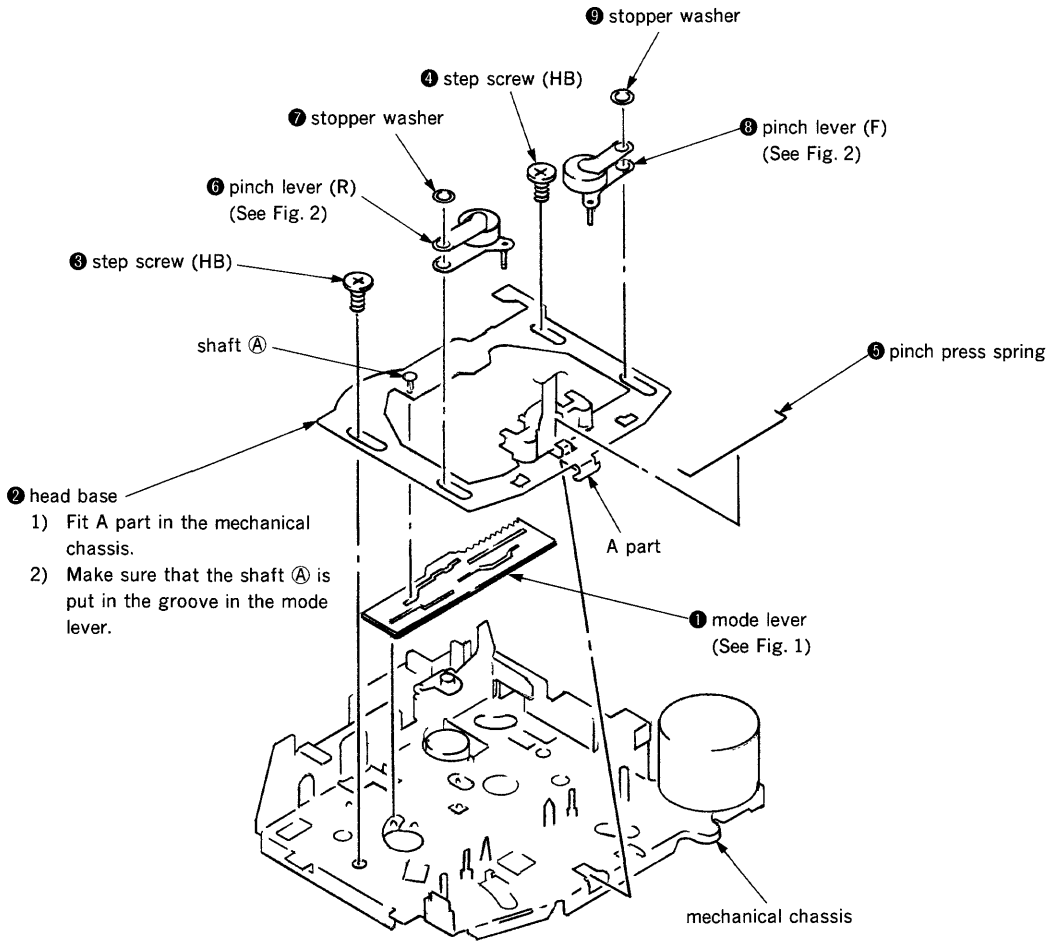
3-1. INSTALLING THE LOADING GEARS


hole Ⓓ
❶ gear (loading D)
1) Align hole Ⓐ with hole Ⓑ.
2) Install the gear onto the shaft firmly.
hole Ⓑ
❸ gear (loading E)
1) Align hole Ⓒ with hole Ⓓ.
2) Install the gear onto the shaft firmly.
❷ Set the rotary switch so that ▲ mark is at the location in the figure.
▲ mark
hole Ⓐ
hole Ⓒ

3-2. INSTALLING THE REEL BRACKET



3-3. INSTALLING THE MODE LEVER AND PINCH LEVERS


❾ stopper washer
❹ step screw (HB)
❼ stopper washer
❽ pinch lever (F)
(See Fig. 2)
❻ pinch lever (R)
(See Fig. 2)
❸ step screw (HB)
shaft Ⓐ
❺ pinch press spring
❷ head base
1) Fit A part in the mechanical chassis.
2) Make sure that the shaft Ⓐ is put in the groove in the mode lever.
A part
❶ mode lever
(See Fig. 1)
mechanical chassis

1) Align • mark on the rotary switch with hole on the mode lever.
2) Make sure that the two shafts and three projections are located as shown below.

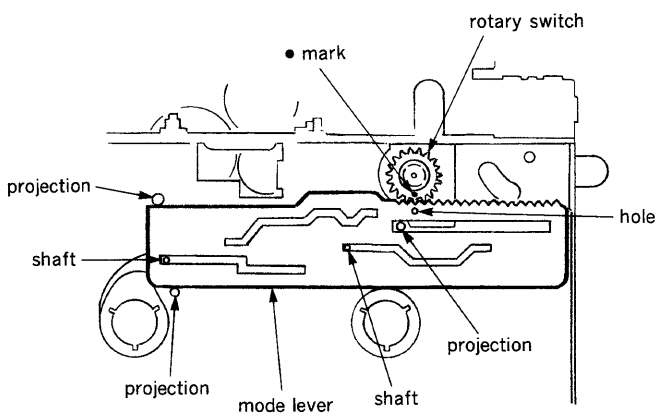


Fig. 1

1) Put the shafts of the pinch levers in the pinch press spring on its head side.

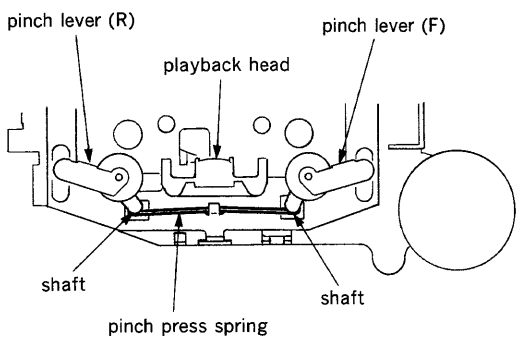


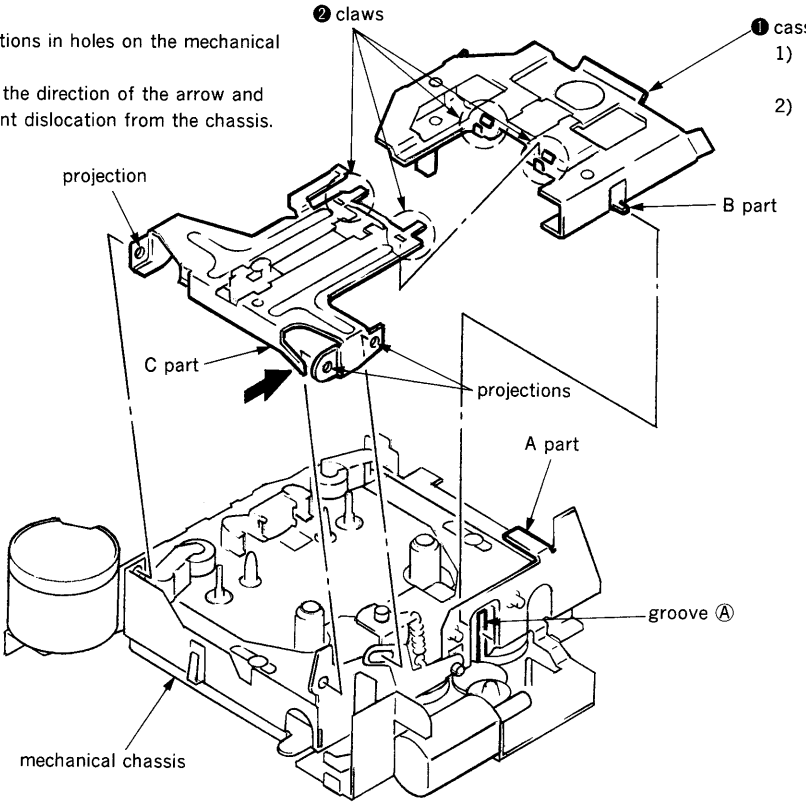
Fig. 2

3-4. INSTALLING THE CASSETTE HOUSING

❸ housing hanger
1) Fit three projections in holes on the mechanical chassis.
2) Bend C part in the direction of the arrow and fasten to prevent dislocation from the chassis.

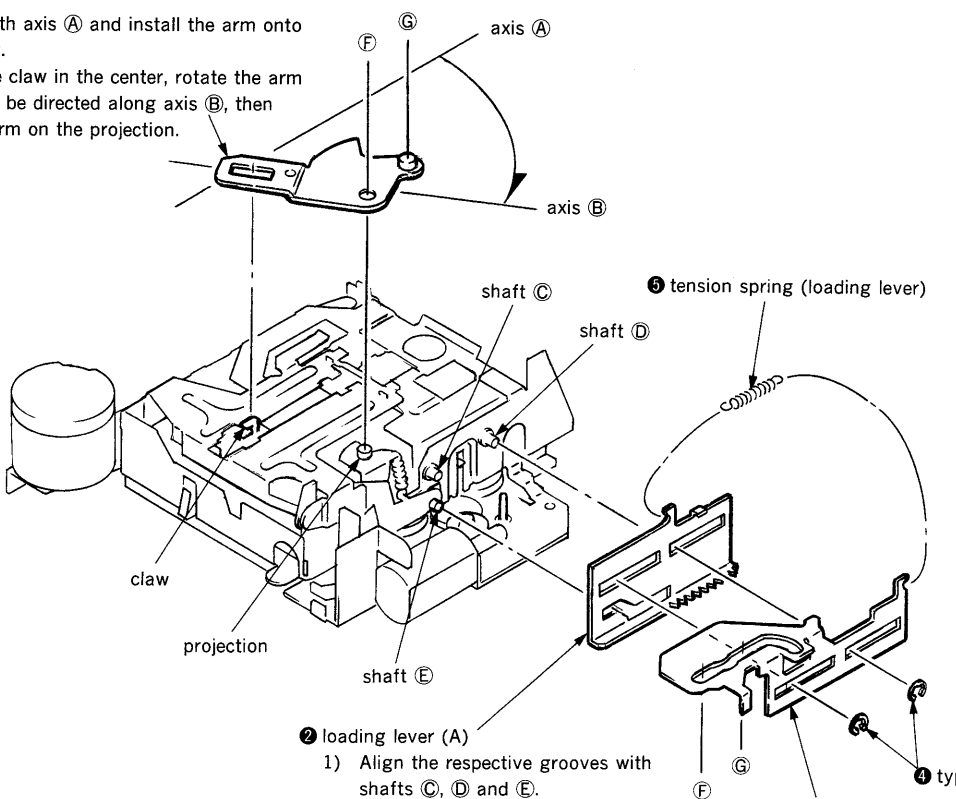
❷ claws

❶ cassette housing
1) Put the cassette housing under A part.
2) Fit B part in groove Ⓐ.

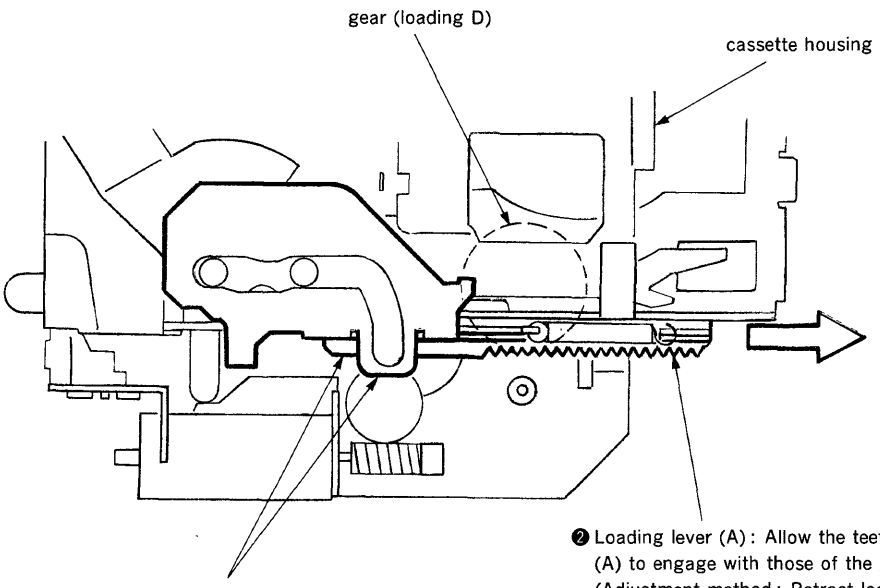


3-5. INSTALLING THE LOADING LEVER

❶ suction arm
1) Align with axis Ⓐ and install the arm onto the claw.
2) With the claw in the center, rotate the arm so as to be directed along axis Ⓑ, then fit the arm on the projection.



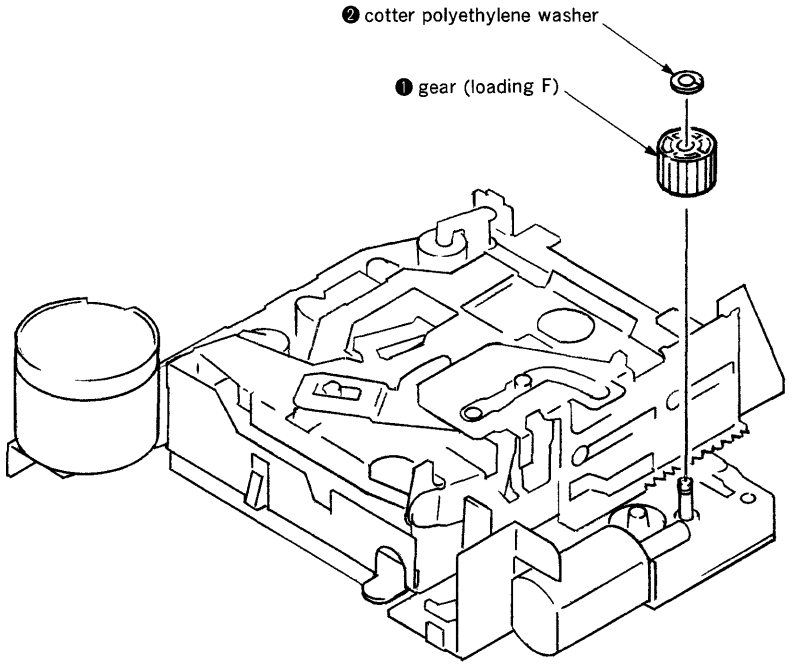
3-6. POSITIONING THE LOADING LEVERS



❶ Loading levers (A) and (B) : Move loading levers (A) and (B) in the direction of the arrow.
(The cassette housing is put down fully at this time.)

❷ Loading lever (A) : Allow the teeth of loading lever (A) to engage with those of the gear (loading D).
(Adjustment method : Retract loading lever (A) by 0.2 to 0.5mm in the opposite direction of the arrow.)

3-7. INSTALLING THE GEAR (LOADING F)



SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	30−65g•cm (0.42−0.90 oz•inch)
FWD Back Tension		0.5−4.5g•cm (0.01−0.06 oz•inch)
REV	CQ-102RC	30−65g•cm (0.42−0.90 oz•inch)
REV Back Tension		0.5−4.5g•cm (0.01−0.06 oz•inch)
FF, REW	CQ-201B	60−200g•cm (0.83−2.78 oz•inch)

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 90g (more than 3.18 oz)
REV	CQ-403R	

SECTION 5
ELECTRICAL ADJUSTMENTS

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and MW Auto Scan/Stop Level adjustments can be performed easier than it in ordinary procedure.

〈Set the Test Mode〉

1. Set the "OFF" mode.
2. Push the preset [4] button.
3. Push the preset [5] button.
4. Press the preset [1] button for two seconds.
5. Then the display indicates all lights, the test mode is set.

〈Release the Test mode〉

1. Push the "OFF" button.

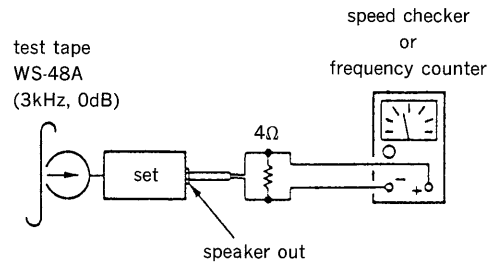
See the adjustment location from on page 21 for the adjustment.

DECK SECTION | **0dB=0.775V**

Tape Speed Adjustment

Procedure:

1. Put the set into the FWD PB mode.



Specification: Constant speed

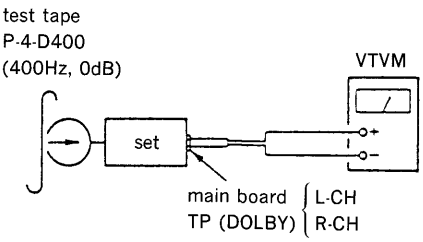
Speed checker	Frequency counter
−1.5 to +2.5%	2,955 to 3,075Hz

Adjustment Location: See page 21.

DOLBY Level Adjustment

Setting:

Preset [3] (DOLBY) button : OFF
SEL (BAS) button : Center
SEL (TRE) button : Center
SEL (BAL) button : Center
SEL (FAD) button : Center
SEL (VOL) button : Maximum



Procedure:

1. Put the set into the FWD PB mode.
2. Adjust RV301 (L-CH) and RV401 (R-CH) so that VTVM reading is −4.7±0.5 dB (0.43 to 0.48V).

Adjustment Location: See page 21.

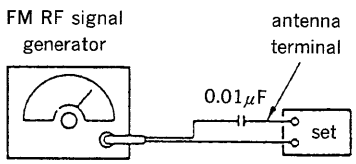
TUNER SECTION | **0dB=1μV**

Cautions during repair
When the front end is defective, replace it by a new one because its internal block is difficult to repair.

FM Auto Scan/Stop Level Adjustment

Setting :

TUNER button : FM

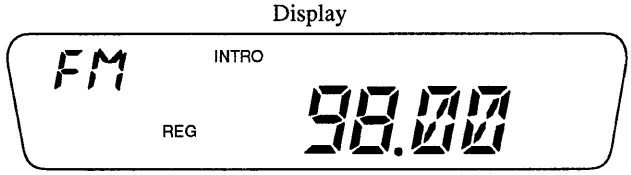


Carrier frequency : 98.00MHz
Output level : 22dB (12.6μV)
Mode : mono
Modulation : 1kHz, 75kHz deviation

Procedure :

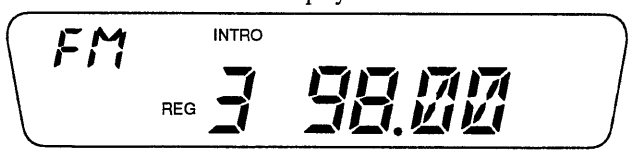
1. Set to the test mode. (See page 17.)
2. Push the [TUNER] button and set to FM.

Display



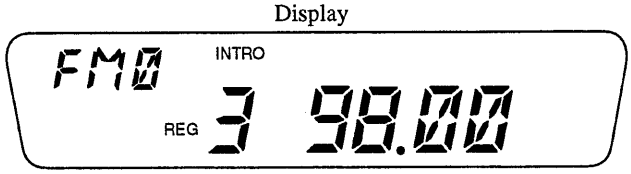
3. Push the preset [3] button.

Display



4. Adjust with the volume RV3 on TU1 so that the "FM" indication turns to "FM0" indication on the display window.
   But, in case of already indicated "FM0", turn the RV3 so that put out light "0" indication and adjustment.

Display

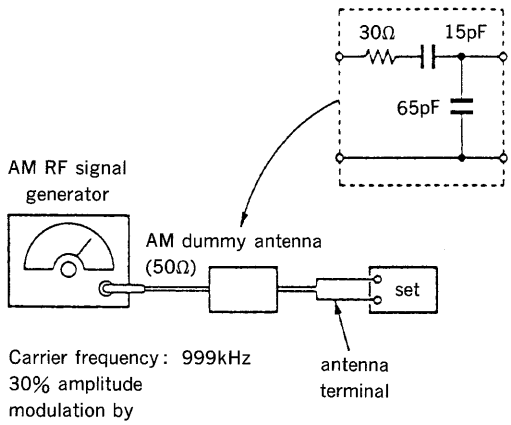


Adjustment Location : See page 21.

MW Auto Scan/Stop Level Adjustment

Setting :

TUNER button : MW

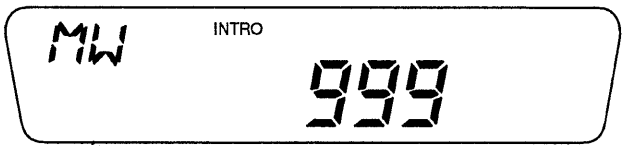


Carrier frequency : 999kHz
30% amplitude modulation by 400Hz signal
Output level : 33dB (44.7μV)

Procedure :

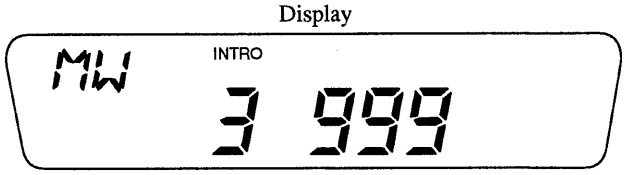
1. Set to the test mode. (See page 17.)
2. Push the [TUNER] button and set to MW.

Display



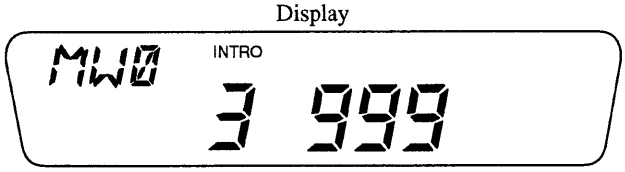
3. Push the preset [3] button.

Display



4. Adjust with the volume RV1 on TU1 so that the "MW" indication turns to "MW0" indication on the display window.
   But, in case of already indicated "MW0", turn the RV1 so that put out light "0" indication and adjustment.

Display



Adjustment Location : See page 21.

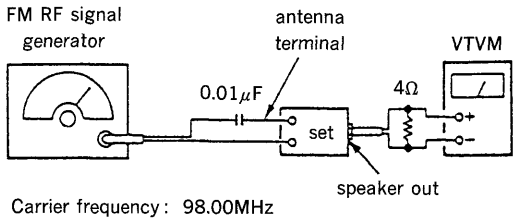
High Cut Control Effect Adjustment

Note :

Before performing this adjustment, adjust the control so that the speaker out of the set is +10dBs at input of 98.00MHz and 60dB.

Setting :

TUNER button : FM



Carrier frequency : 98.00MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 10kHz, 40kHz deviation

Procedure :

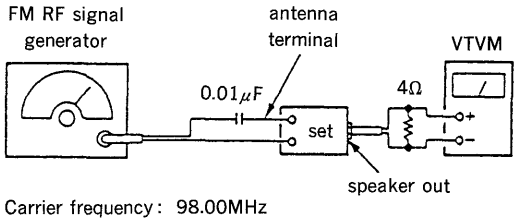
1. Tune the 98.00MHz.
2. The then output level is supposing that (A) dB.
3. Adjust with the volume RV2 on TU1 so that the output level is (A)−3dB (AEP, UK model) or (A) −5dB (German model) then signal generator input set to 20dB.

Adjustment Location : See page 21.

FM Noise Focus Adjustment

Setting :

TUNER button : FM



Carrier frequency : 98.00MHz
Output level : 70dB (3.2mV)
Mode : mono
Modulation : 1kHz, 75kHz deviation

Procedure :

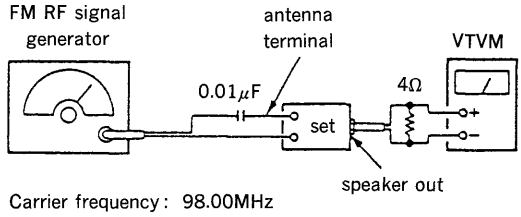
1. Tune the 98.00MHz.
2. The then output level is supposing that (B) dB.
3. Adjust with the volume RV5 on TU1 so that the output level is (B)−30dB then signal generator input set to −20dB.

Adjustment Location : See page 21.

FM Stereo Separation Adjustment

Setting :

TUNER button : FM



Carrier frequency : 98.00MHz
Output level : 70dB (3.2mV)
Mode : stereo
Modulation : main : 1kHz, 20kHz deviation (26%)
sub : 1kHz, 20kHz deviation (26%)
19kHz pilot : 7.5kHz deviation (10%)

Procedure :

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 on TU1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 on TU1 for minimum reading.

L-CH Stereo separation : Ⓐ−Ⓑ
R-CH Stereo separation : Ⓒ−Ⓓ
The separations of both channels should be equal.

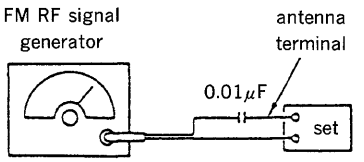
Specification : Separation more than 30dB

Adjustment Location : See page 21.

RDS S-Meter Adjustment

Setting :

TUNER button : FM



Carrier frequency : 98.00MHz
Output level : 35dB (56.2μV)
Mode : mono
Modulation : no modulation

Procedure :

1. Set to the test mode. (See page 17.)
2. Push the [TUNER] button and set to FM.

Display

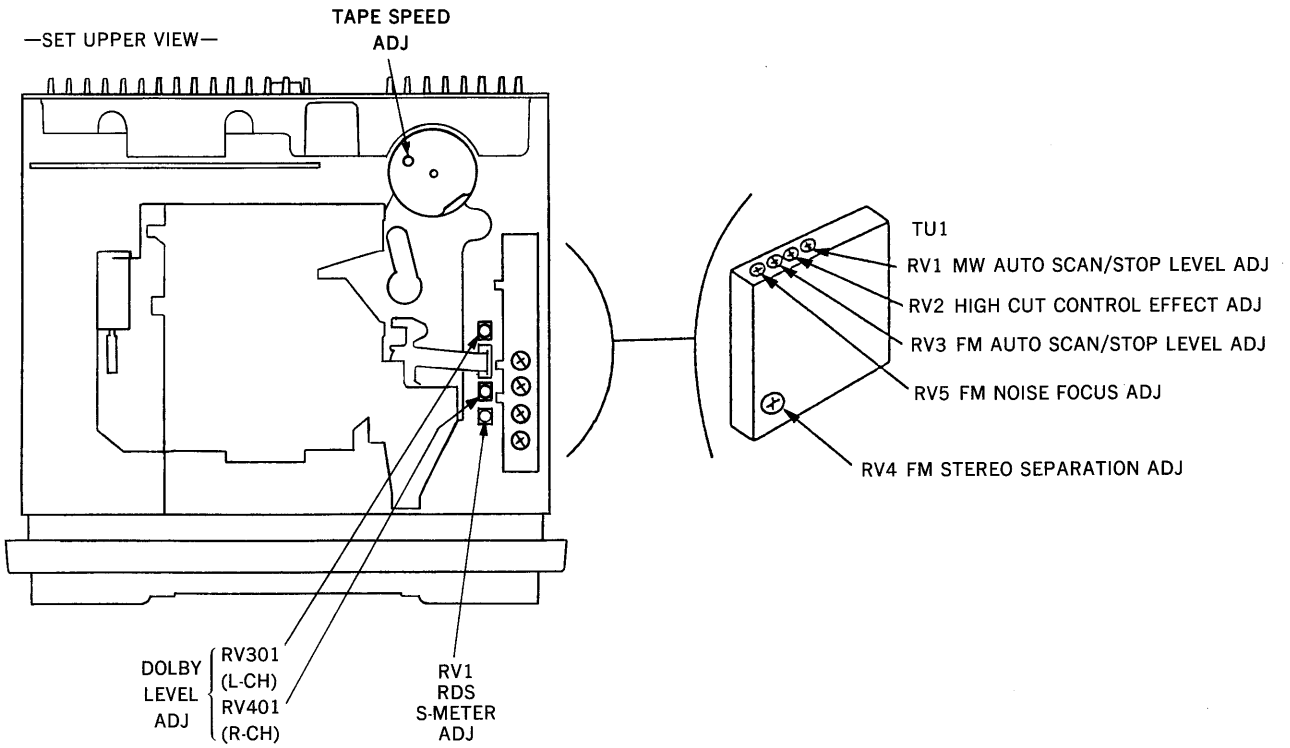
3. Push the preset [6] button.
4. Adjust RV1 so that the display indication is "118".

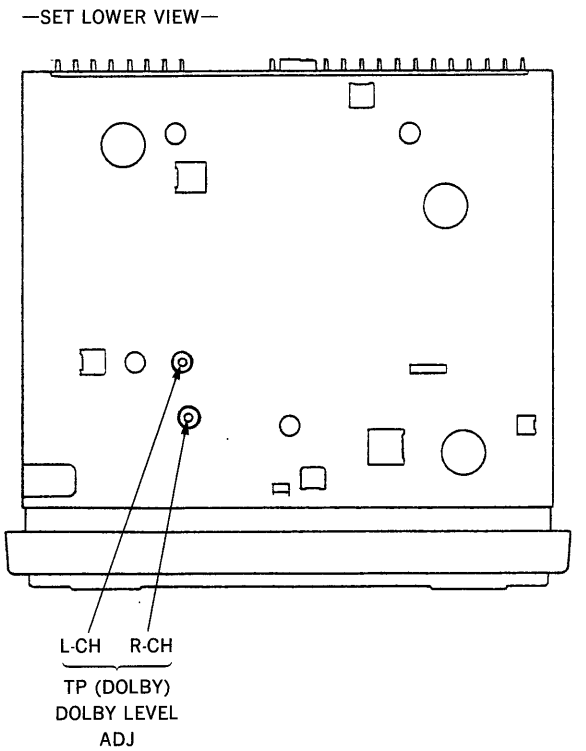
Display

Specification : Display indication : 116 to 120

Adjustment Location : See page 21.

Adjustment Location :





SECTION 6
DIAGRAMS

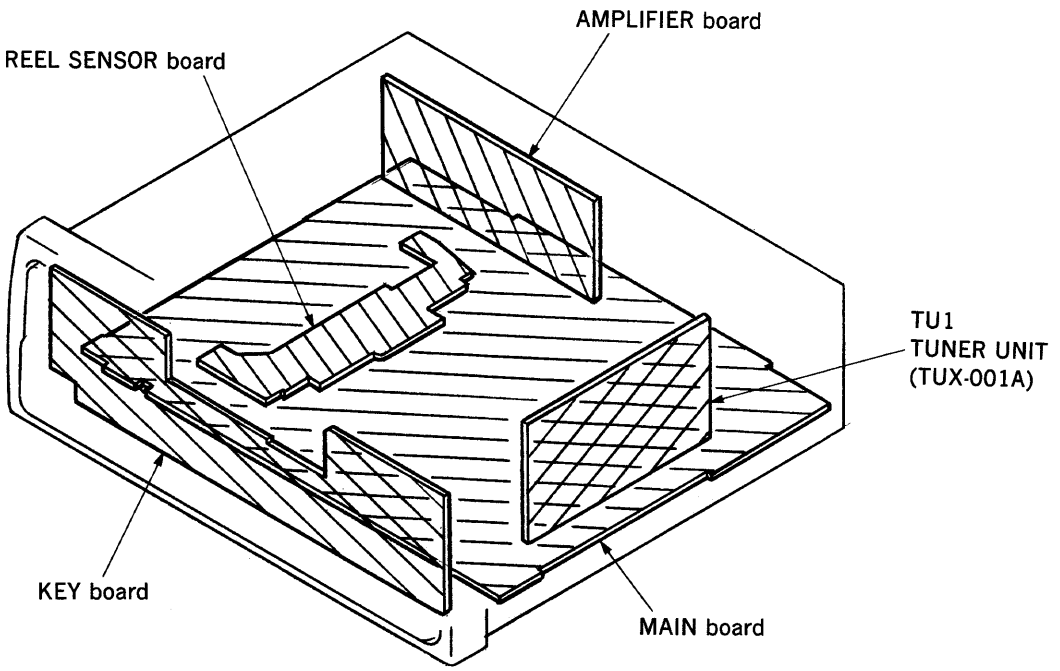
6-1. PIN DESCRIPTION

• IC501 MN1884820S3N (System Control)

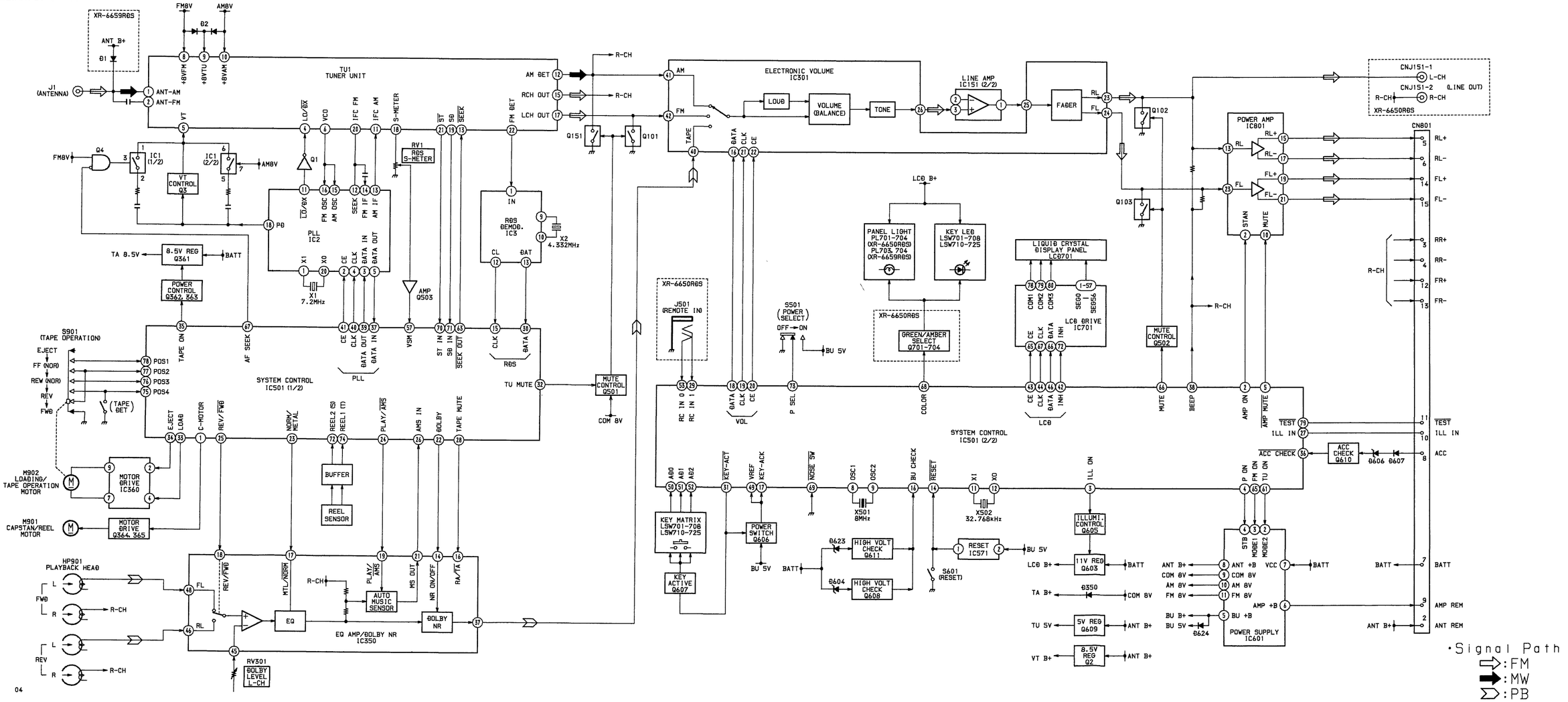
Pin No.	Pin Name	I/O	Pin Description
1	C MOTOR	O	Tape capstan motor control signal output terminal
2	AMP ON	O	Power amplifier control output terminal
3	ILL ON	O	Illumination control output terminal
4	P ON	O	System power control output terminal
5	$\overline{\text{AMP MUTE}}$	O	Power amplifier mute control output terminal
6	MODEL0	I	Key function select setting input terminal
7	VDD1	—	Power input terminal
8	OSC1	I	Connection oscillator 8MHz cera-lock
9	OSC2	O	Connection oscillator 8MHz cera-lock
10	VSS	—	GND
11	XI	I	32.768kHz crystal connection
12	XO	O	32.768kHz crystal connection
13	EX2	I	Connect to GND.
14	$\overline{\text{RESET}}$	I	Reset input terminal
15	RDS CLK	I	RDS-CLK input terminal
16	B. U CHECK	I	BACK-UP detection input terminal
17	KEY ACK	I	Key input acknowledge terminal
18	VOL DATA	I	E. VOL DATA output terminal
19	VOL CLK	I	E. VOL CLK output terminal
20	VOL CE	I	E. VOL CE output terminal
21	—	—	Not used.
22	DOLBY	O	DOLBY control output terminal
23	$\overline{\text{NOR}}$/METAL	O	At tape, METAL control output terminal
24	PLAY/$\overline{\text{AMS}}$	O	At tape, AMS control output terminal
25	REV/$\overline{\text{FWD}}$	O	Forward/Reverse detect output terminal
26	AMS IN	I	At AMS, music with/without detect input terminal
27	ILL IN	I	Illuminator control input terminal
28	TAPE MUTE	O	Tape mute signal output terminal
29	RC IN1	I	Remote commander signal input terminal (XR-6650RDS)
30	RDS DATA	I	RDS-DATA input terminal
31	$\overline{\text{KEY ACT}}$	O	AD port control output terminal
32	TU MUTE	O	Tuner mute output terminal
33	LOAD	O	Loading motor control output terminal (Loading direction)
34	EJECT	O	Loading motor control output terminal (Eject direction)
35	TAPE ON	O	Tape power control output terminal
36	$\overline{\text{ACC CHECK}}$	I	ACC detection input terminal
37	PLL DATA IN	I	PLL DATA input terminal
38	BEEP	O	BEEP sound output terminal
39	PLL DATA	O	PLL DATA output terminal
40	PLL CLK	O	PLL CLK output terminal
41	PLL CE	O	PLL CE output terminal
42	LCD INH	O	LCD-INH output terminal
43	LCD CE	O	LCD-CE output terminal

Pin No.	Pin Name	I/O	Pin Description
44	LCD CLK	O	LCD-CLK output terminal
45	—	—	Not used.
46	LCD DATA	O	LCD-DATA output terminal
47	VDD2	—	Power terminal
48	AVDD	—	Power terminal of AD input port. Connect to pin ㊼.
49	VREF	—	Reference voltage input of AD input port. (+side)
50	AD 0	I	KEY input terminal
51	AD 1	I	KEY input terminal
52	AD 2	I	KEY input terminal
53	RC IN0	I	Remote commander signal input terminal (XR-6650RDS)
54	MS1	I	Port for destination select setting MS0 MS1 MODESEL1 / MODESEL2 / Destination L / L / FM+MW+LW
55	MS0	I	
56	OVER V	I	Connect to GND.
57	VSM	I	Signal meter voltage detection terminal of FM/AM common.
58	VREF	—	Reference voltage input of AD input port. (−side)
59	VSS	—	GND. Connect to pin ㊽.
60	VSS2	—	GND
61	TUNER ON	O	At TUNER ON, "H" output.
62	—	—	Not used.
63	$\overline{\text{SEEK OUT}}$	O	SEEK OUT output terminal (RECEIVE)
64	AM ON	—	Not used.
65	FM ON	O	FM-ON output terminal
66	MUTE	O	Mute signal output terminal
67	AF SEEK	O	Output terminal for AF-SEEK.
68	COLOR	O	ILL-COLOR select output terminal
69	$\overline{\text{NOSE SW}}$	I	Input pin for detecting mounting of front panel.
70	ST IN	I	ST indicate to turn ON for "L".
		O	At forced monaural, output for "L".
71	SD IN	I	STOP decide on SEEK, AUTO-MEMORY and SCAN.
72	REEL2	I	Reel table reverse direction rotation detect input terminal
73	P. SEL SW	I	Power select switching input terminal
74	REEL1	I	Reel table forward direction rotation detect input terminal
75—78	POS4—1	I	Position signal detect input terminal
79	$\overline{\text{TEST}}$	I	Test mode input terminal
80	MODEL1	I	Key function select setting input terminal

6-2. CIRCUIT BOARDS LOCATION



6-3. BLOCK DIAGRAM



6-4. PRINTED WIRING BOARDS—MAIN SECTION— • Refer to page 41 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
(D1)	C-2	IC2	E-5
D2	E-2	IC3	H-5
D3	D-3	IC151	D-5
D350	F-6	IC301	D-6
D361	H-11	IC350	G-4
D362	F-11	IC360	F-10
D501	F-6	IC501	H-7
D502	B-8	IC571	I-10
D503	C-8	IC601	E-10
D504	I-6	IC801	B-15
D505	I-6		
D506	I-7	Q1	F-3
D507	C-9	Q2	D-3
D601	E-9	Q3	E-3
D604	C-10	Q4	C-4
D605	B-4	Q101	F-6
D606	C-11	Q102	B-6
D607	C-11	Q103	B-6
D608	I-2	Q151	E-5
D609	I-2	Q201	F-6
D610	I-3	Q202	B-7
D611	I-4	Q203	B-6
D612	I-3	Q361	G-10
D613	I-4	Q362	H-10
D614	I-3	Q363	H-10
D615	I-10	Q364	E-10
D617	B-4	Q365	E-10
D618	I-3	Q501	F-7
D619	I-4	Q502	B-9
D622	B-3	Q503	H-3
D623	B-10	Q603	E-9
D624	E-10	Q605	E-9
D625	I-4	Q606	H-6
D851	C-17	Q607	I-6
D852	C-13	Q608	B-10
D853	C-17	Q609	B-5
		Q610	B-11
IC1	D-3	Q611	B-10

( ): XR-6659RDS only

Note :
- o— : parts extracted from the component side.
- ▒▒ : Pattern on the side which is seen.

【MAIN BOARD】

【AMPLIFIER BOARD】

【REEL SENSOR BOARD】

M901 CAPSTAN/REEL MOTOR

M902 LOADING/ TAPE OPERATION MOTOR

HP901 PLAYBACK HEAD

S901 TAPE OPERATION ROTARY SLIDE SWITCH

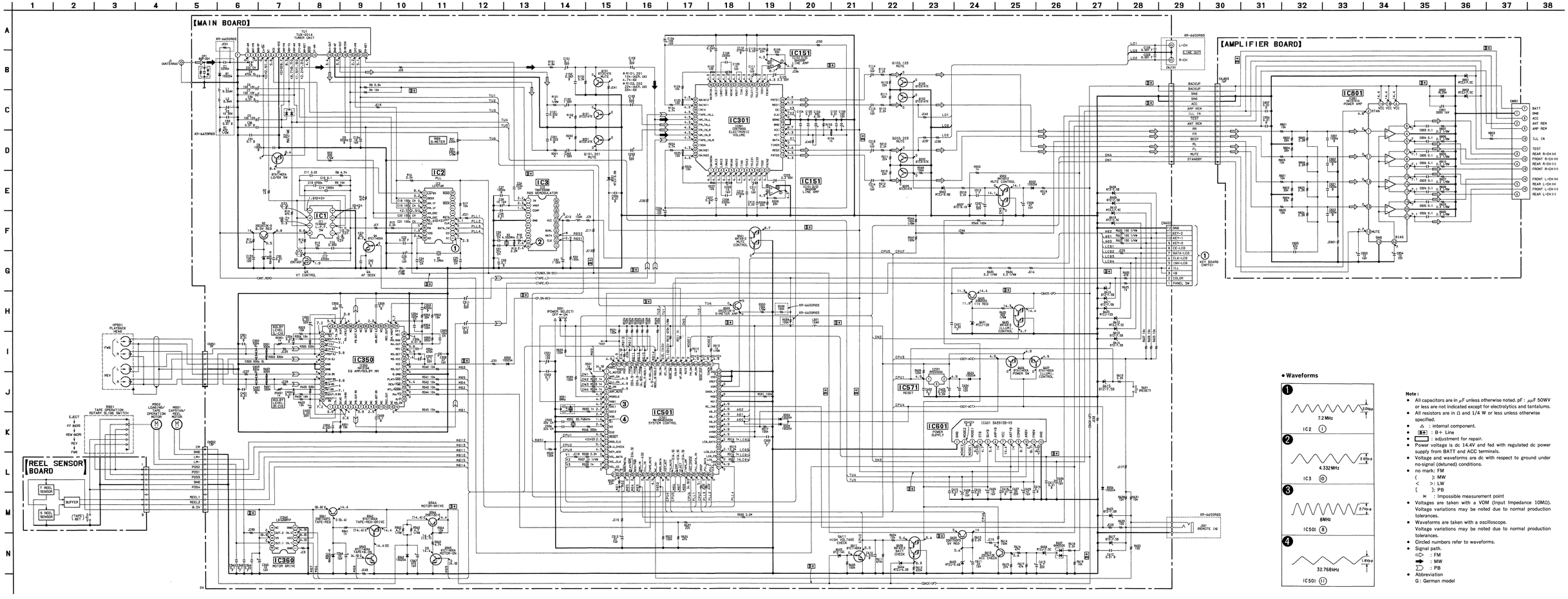
S601 (RESET)

KEY BOARD CNP701

XR-6650RDS

XR-6659RDS

6-5. SCHEMATIC DIAGRAM—MAIN SECTION— • Refer to page 42 for IC Block Diagrams.


【MAIN BOARD】
【AMPLIFIER BOARD】
【REEL SENSOR BOARD】
IC1
IC2
IC3
IC301
IC350
IC360
IC501
IC571
IC601
IC801
IC151
• Waveforms
7.2MHz
4.332MHz
8MHz
32.768kHz
Note
All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
All resistors are in Ω and 1/4 W or less unless otherwise specified.
△ : internal component.
B+ : B+ Line
: adjustment for repair.
Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark: FM
( ): MW
< >: LW
[ ]: PB
⋈ : Impossible measurement point
Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
Circled numbers refer to waveforms.
Signal path.
: FM
: MW
: PB
Abbreviation
G : German model

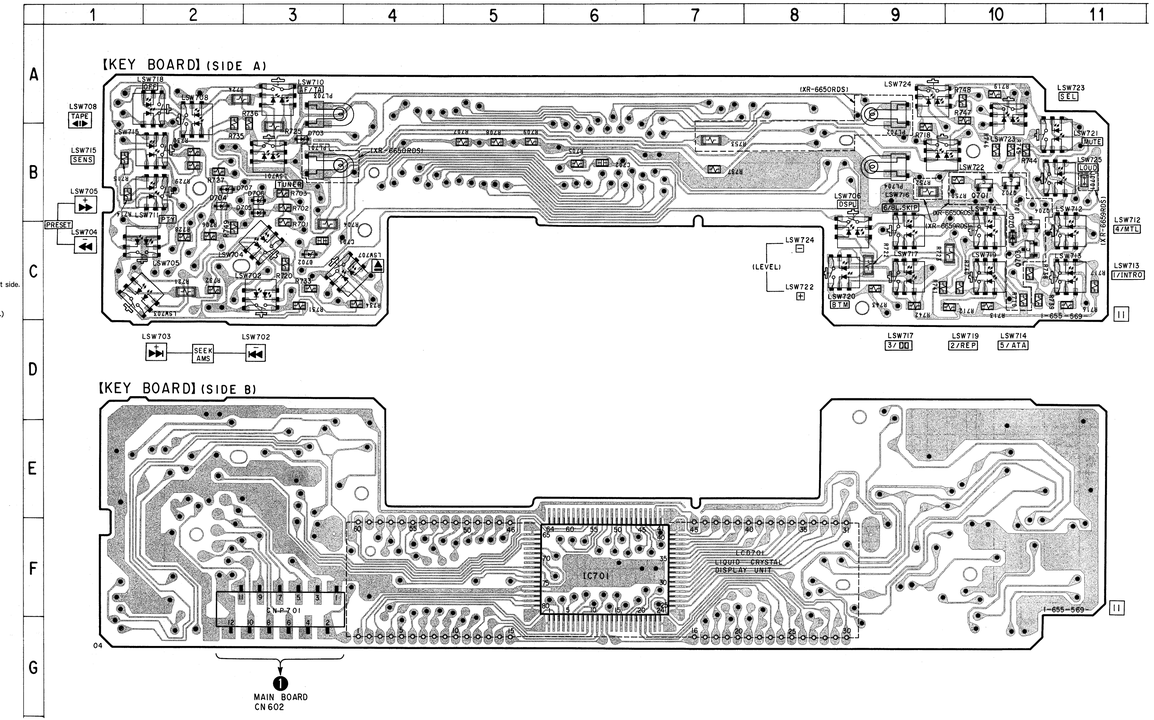
6-6. PRINTED WIRING BOARD—PANEL SECTION—

● Semiconductor Location

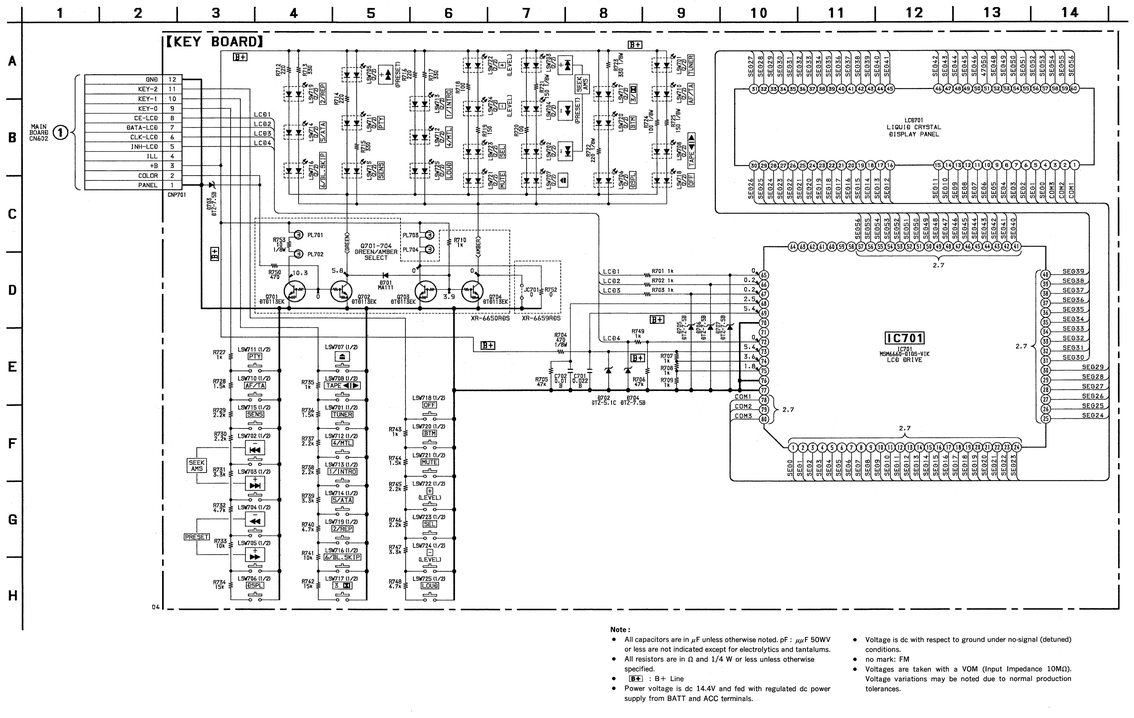
Ref. No.	Location
‹D701›	C-10
D702	C-3
D703	B-3
D704	B-2
D705	B-3
D706	B-3
D707	B-2
IC701	F-6
‹Q701›	B-10
‹Q702›	B-10
‹Q703›	C-10
‹Q704›	C-10

‹ ›: XR-6650RDS only

Note :
- ○— : parts extracted from the component side.
- ● : Through hole.
- ▩ : Pattern on the side which is seen. (The other layer's patterns are not indicated.)



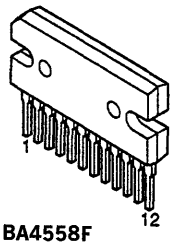
6-7. SCHEMATIC DIAGRAM—PANEL SECTION—



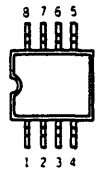
Note :
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

6-8. SEMICONDUCTOR LEAD LAYOUTS

BA3910B-V3

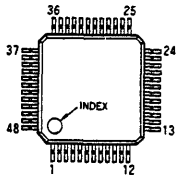


BA4558F
TC4W66F



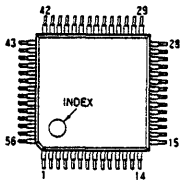
(TOP VIEW)

CXA1946Q



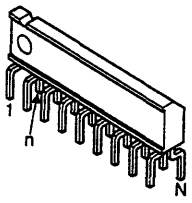
(TOP VIEW)

HA12164

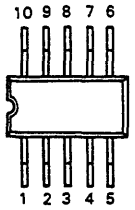


(TOP VIEW)

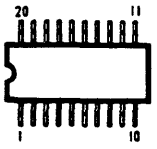
HA13151A



LB1638M

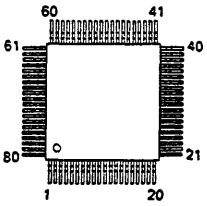


LC7216M
TDA7330BD-013TR

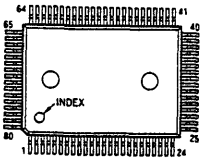


(TOP VIEW)

MN1884820S3N

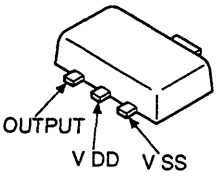


MSM6660-01GS
-V1K

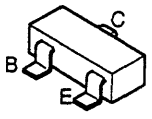


(TOP VIEW)

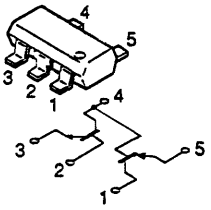
RH5VA40AA



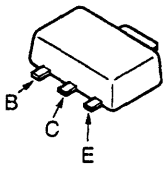
DTA114EKA-T146
DTC114EKA-T146
DTC314TKH04
DTD113EK
2SC1623-L5L6



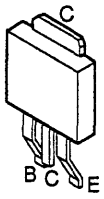
XN1A312-TX



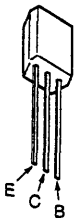
2SB1115A-YQ



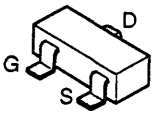
2SD1760F5-Q



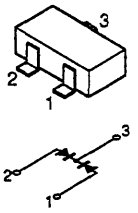
2SD2525



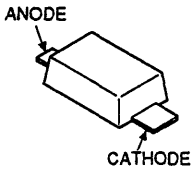
2SK1657-T1B



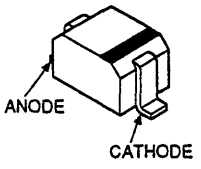
DAN202K
MA721WK-(TX)



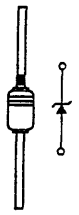
DTZ16C
DTZ5.1C
DTZ7.5B
DTZ9.1B



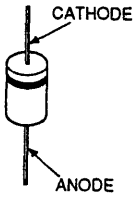
MA111



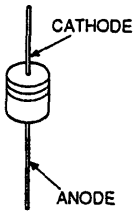
MA4091-H (QZ)
RD12ESB2
RD3.9ESB2
RD5.6ESB2
RD6.2ESB2
RD7.5ESB2



RL254

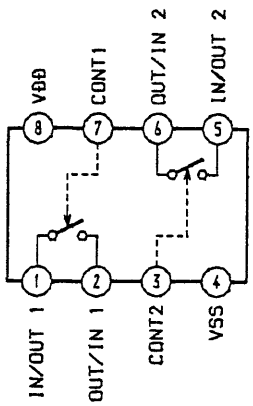


1SS119-25

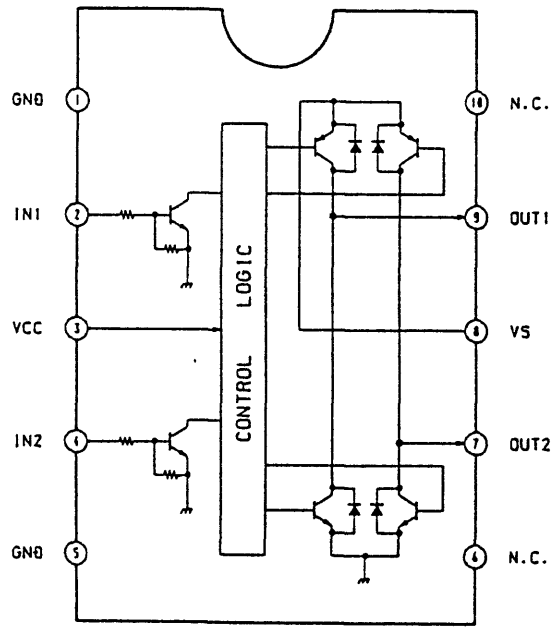


• **IC Block Diagrams**

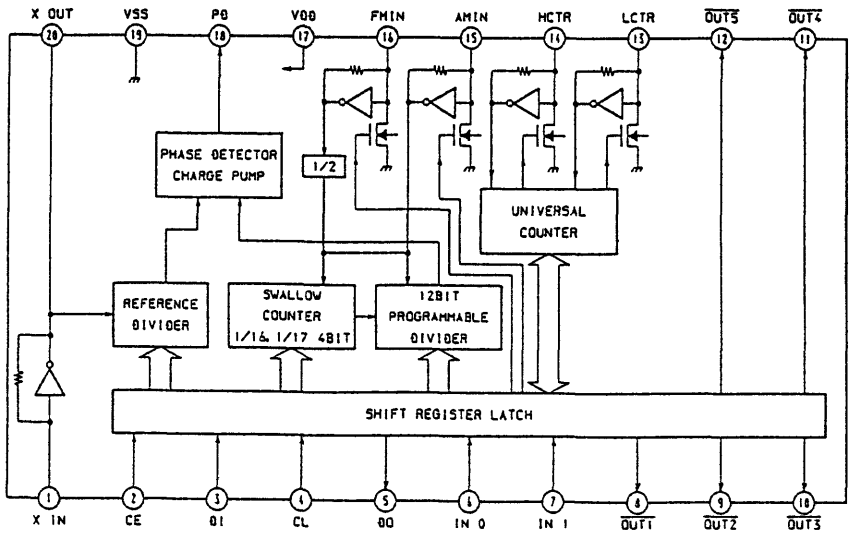
IC1 TC4W66F



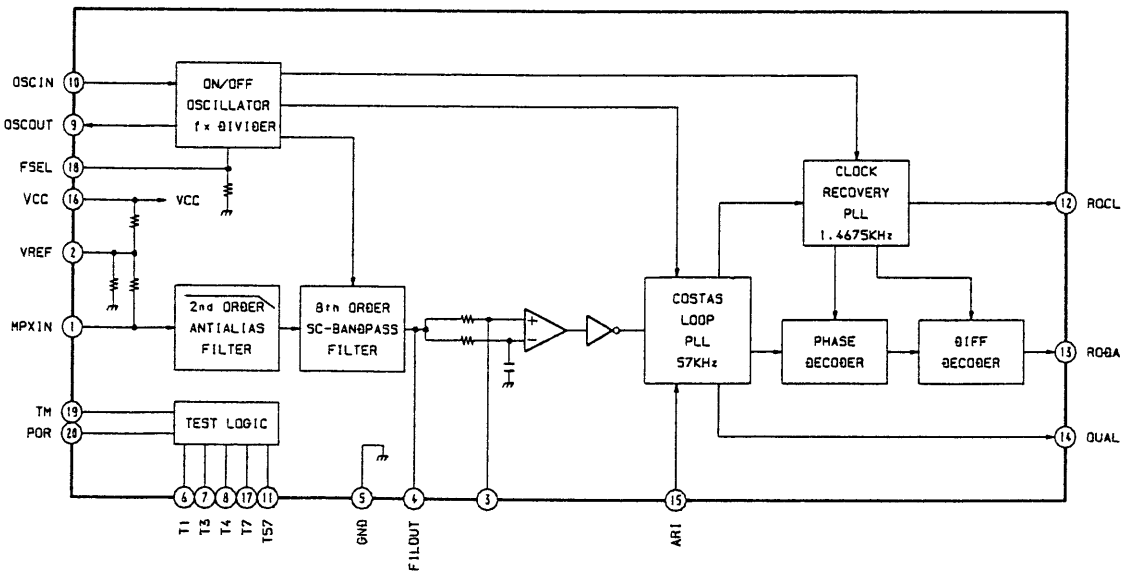
IC360 LB1638MTP



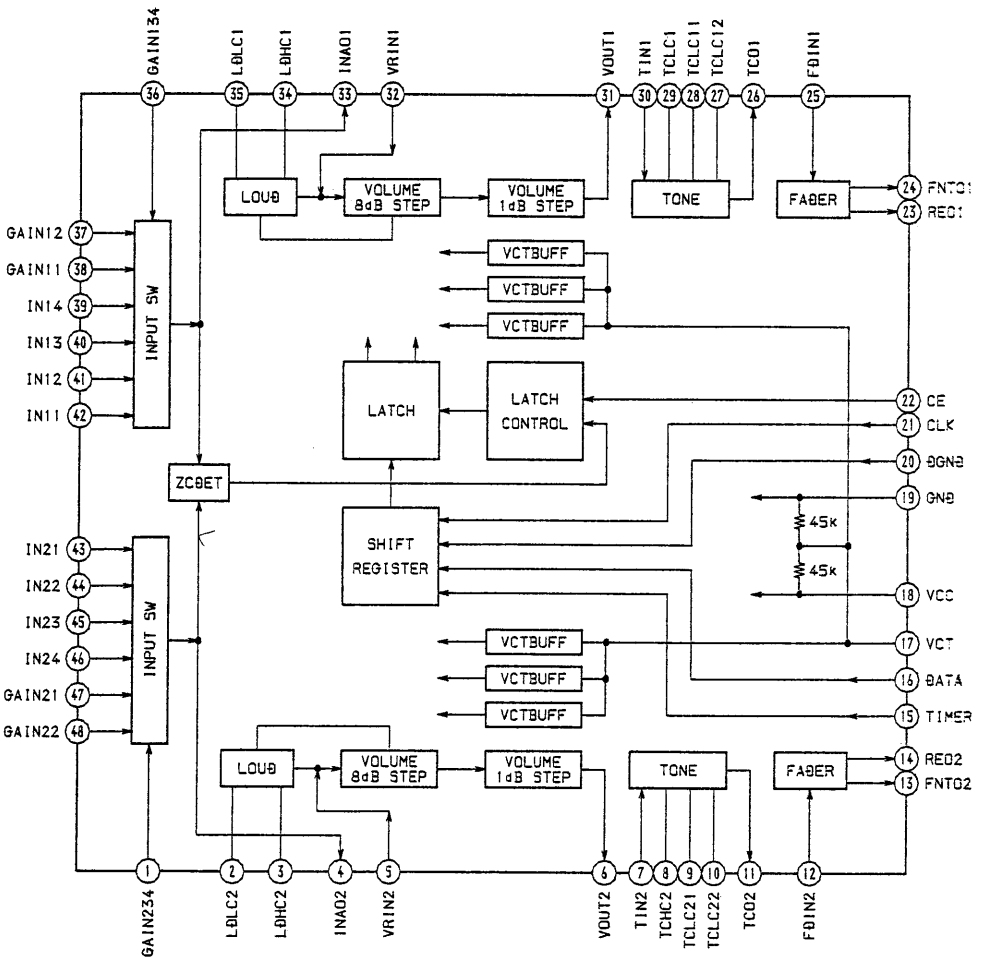
IC2 LC7216M



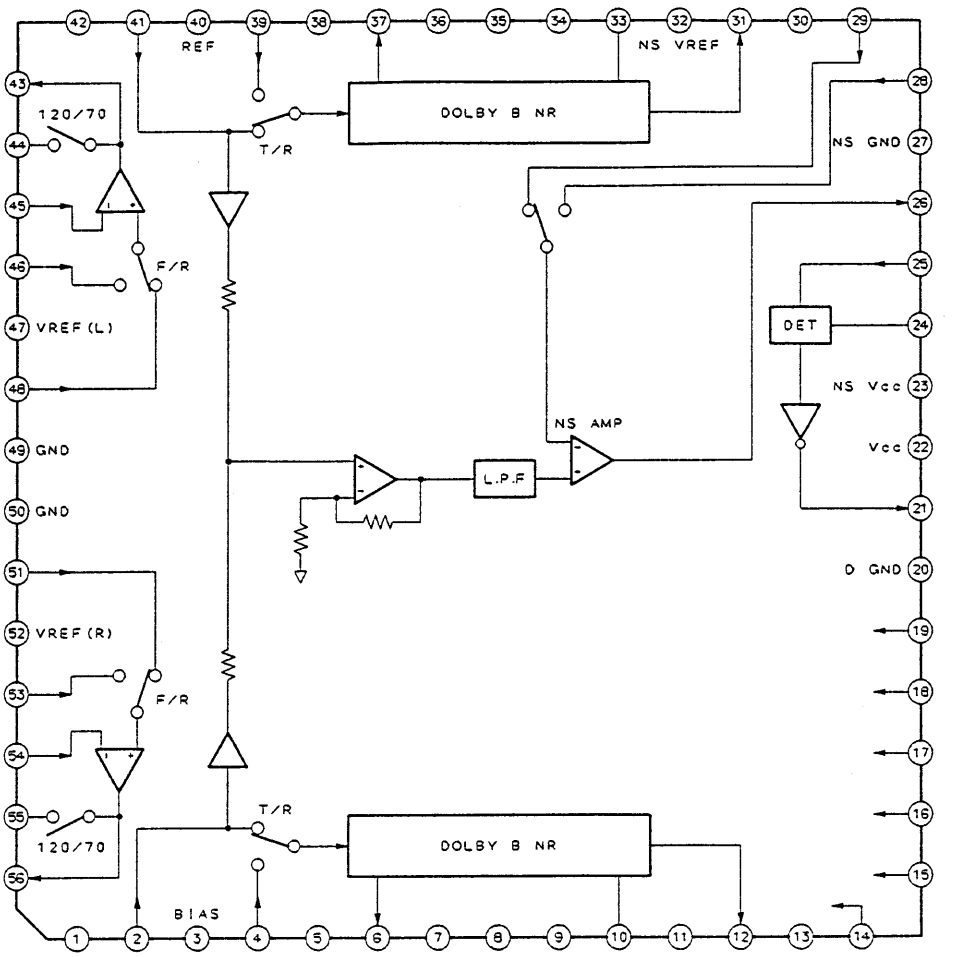
IC3 TDA7330BD



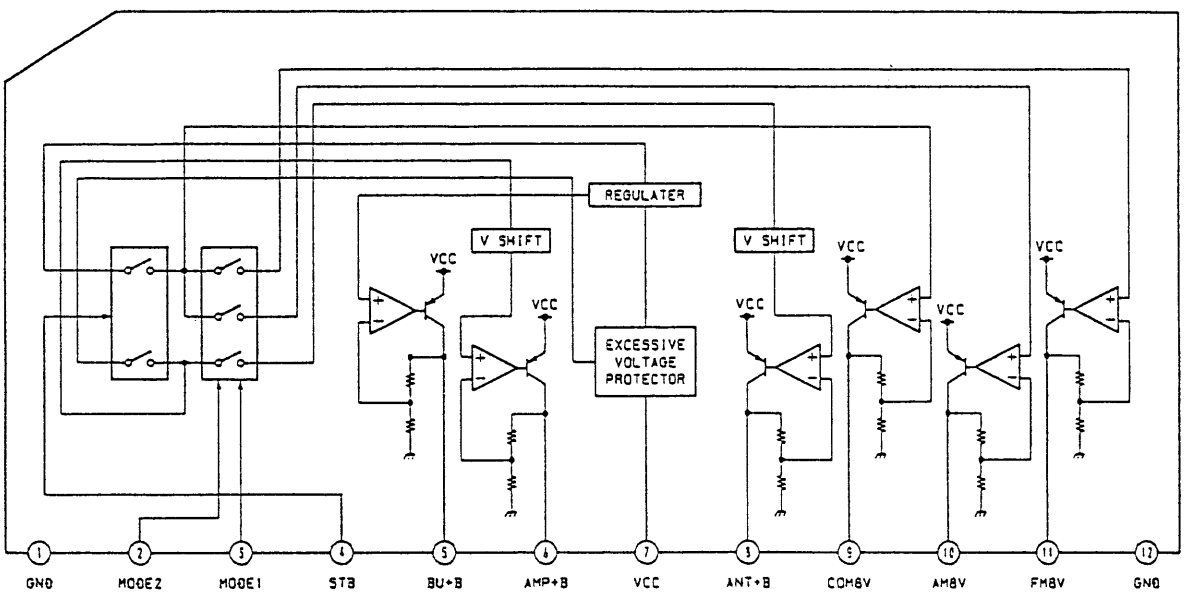
IC301 CXA1946Q



IC350 HA12164



IC601 BA3910B-V3

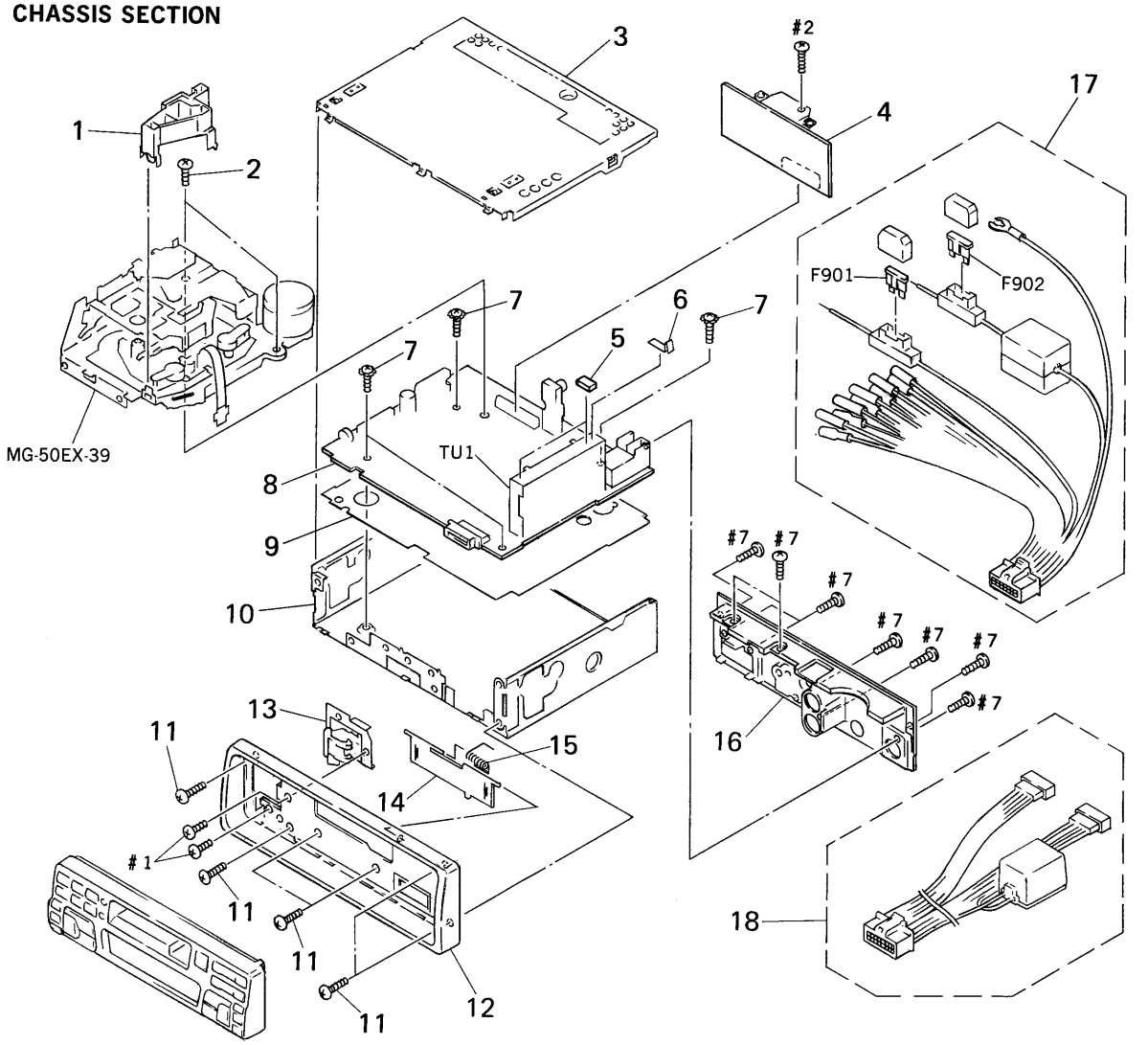


SECTION 7
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  G : German model

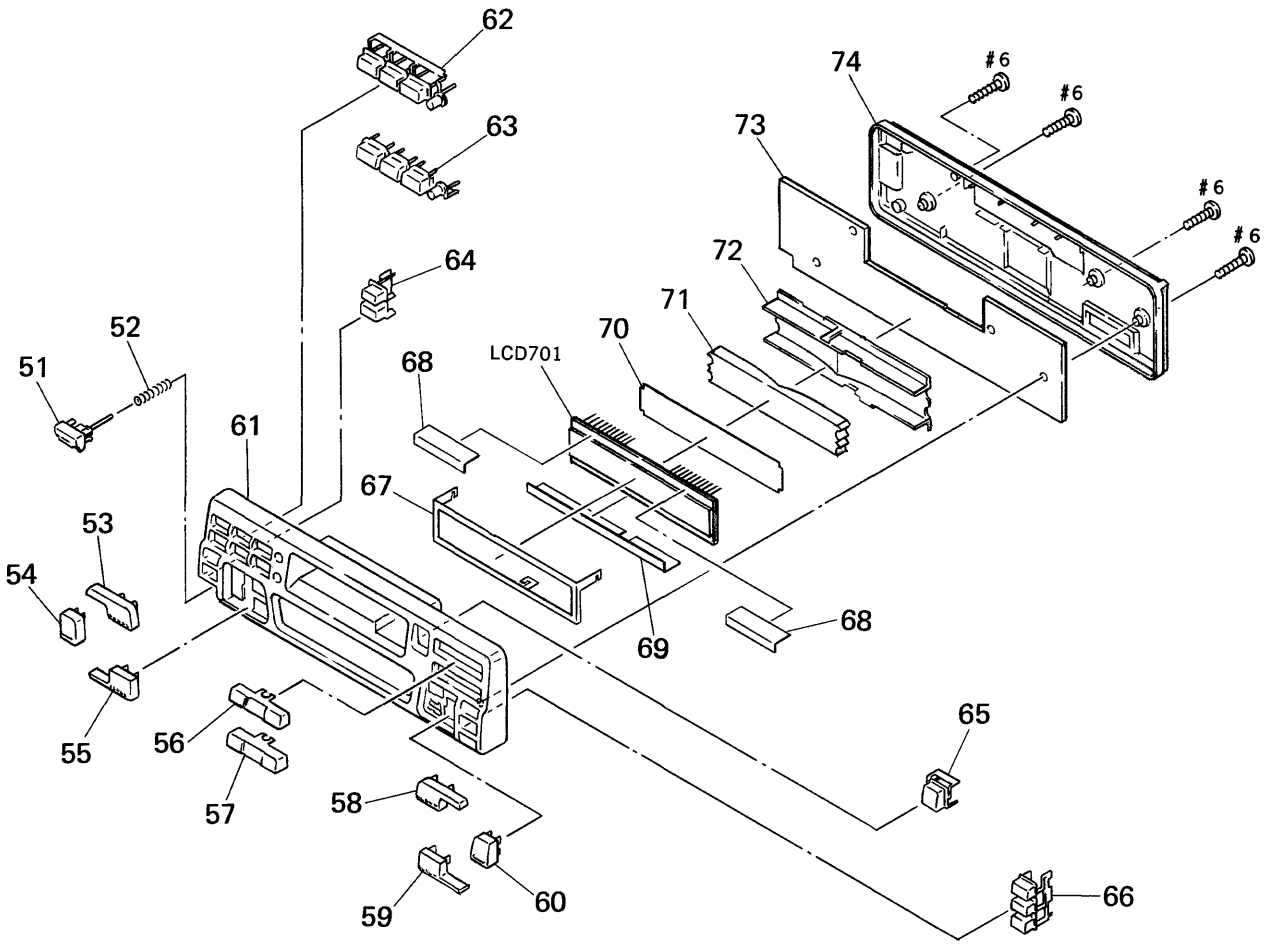
7-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	3-916-872-01	GUIDE	
2	3-919-171-01	SCREW (2.6X6) (C TIGHT)	
* 3	X-3369-845-1	COVER ASSY	
* 4	1-655-568-11	AMPLIFIER BOARD	
5	9-911-840-XX	CUSHION (U)	
* 6	3-355-209-01	PLATE (B), GROUND	
7	3-915-923-01	SCREW, GROUND POINT	
* 8	A-3298-507-A	MAIN BOARD, COMPLETE (6650RDS:AEP, UK)	
* 8	A-3298-511-A	MAIN BOARD, COMPLETE (6650RDS:G)	
* 8	A-3298-512-A	MAIN BOARD, COMPLETE (6659RDS)	
* 9	3-921-414-01	SHEET, INSULATING	
* 10	X-3369-844-1	CHASSIS ASSY	
11	3-907-995-01	SCREW (2.6X8) (BZN), +PTT	

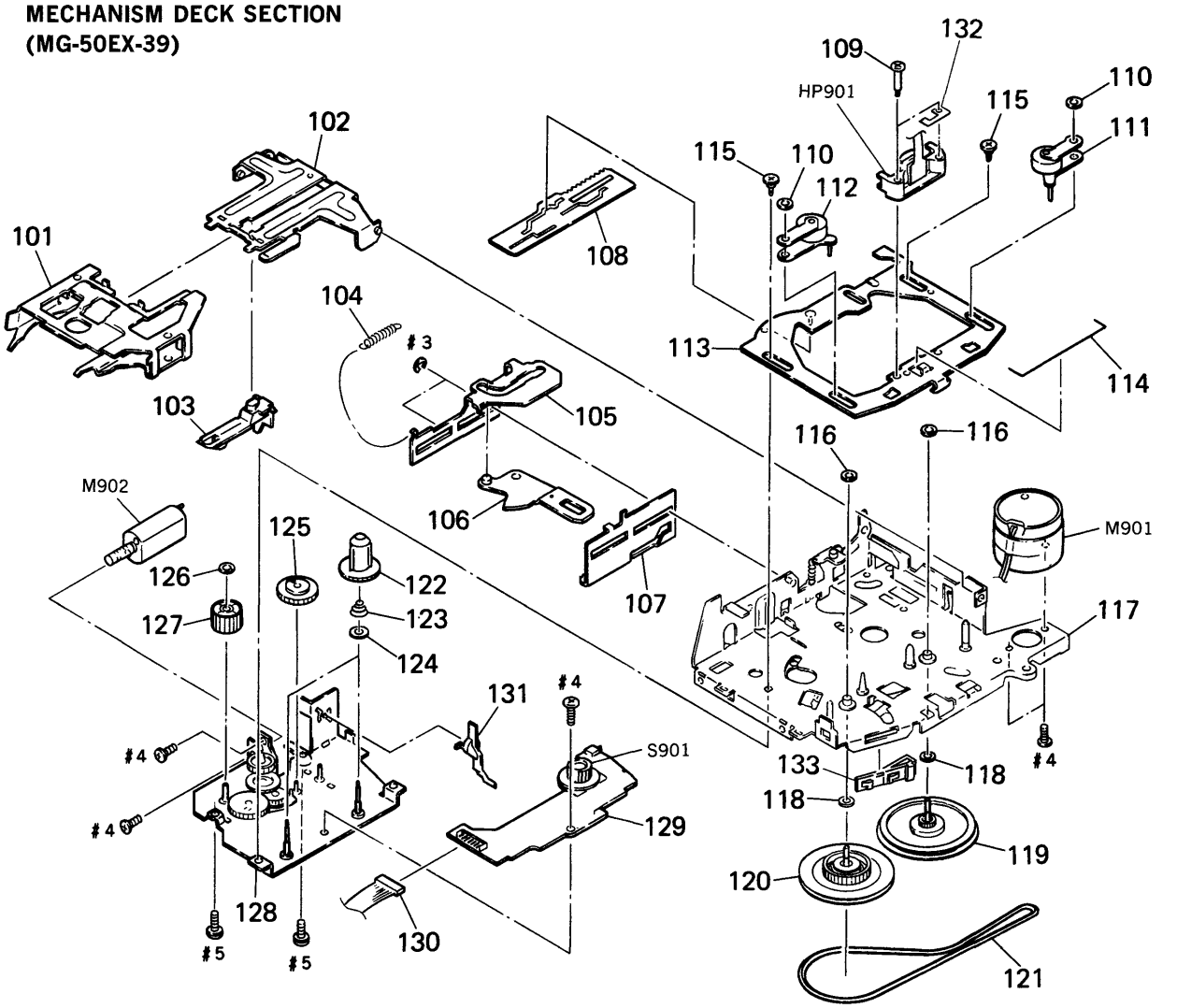
Ref. No.	Part No.	Description	Remark
12	3-921-625-01	PANEL, SUB	
13	X-3367-636-1	LOCK ASSY	
14	3-918-583-21	DOOR, CASSETTE	
15	3-913-076-01	SPRING (C DOOR), TORSION	
* 16	3-921-658-11	HEAT SINK (6650RDS)	
* 16	3-921-658-31	HEAT SINK (6659RDS)	
17	1-765-082-11	CORD (WITH CONNECTOR) (6650RDS)	
18	1-769-439-11	CORD (WITH CONNECTOR) (ISO) (6659RDS:AMBER)	
18	1-769-439-21	CORD (WITH CONNECTOR) (ISO) (6659RDS:GREEN)	
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)	
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)	
TU1	A-3282-003-A	TUNER UNIT (TUX-001A)	

7-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-921-900-01	BUTTON (RELEASE)	
52	3-375-373-01	SPRING (RELEASE)	
53	3-921-631-01	BUTTON (+)	
54	3-921-633-01	BUTTON (SEL)	
55	3-921-632-01	BUTTON (-)	
56	3-921-634-01	BUTTON (SEEK)	
57	3-921-635-01	BUTTON (PRESET)	
58	3-921-629-01	BUTTON (TUNER)	
59	3-921-630-01	BUTTON (AF/TA)	
60	3-921-628-01	BUTTON (TAPE)	
61	3-921-623-01	PANEL, FRONT (6650RDS)	
61	3-921-623-11	PANEL, FRONT (6659RDS)	
62	3-921-637-01	BUTTON (1-3)	
63	3-921-638-01	BUTTON (4-6)	
64	3-921-627-01	BUTTON (2 GANG)	
65	3-921-636-01	BUTTON (EJECT)	
66	3-921-626-01	BUTTON (3 GANG)	
* 67	3-921-659-01	PLATE (LCD), GROUND	
* 68	3-921-727-01	SHEET (LCD) (S)	
* 69	3-921-726-01	SHEET (LCD) (L)	
* 70	3-921-660-01	SHEET (REFLECTOR)	
* 71	3-921-656-01	PLATE, LIGHT GUIDE	
* 72	3-921-657-01	HOLDER (LCD)	
* 73	A-3298-509-A	KEY BOARD, COMPLETE (6650RDS)	
* 73	A-3298-513-A	KEY BOARD, COMPLETE (6659RDS:AMBER)	
* 73	A-3298-515-A	KEY BOARD, COMPLETE (6659RDS:GREEN)	
74	3-921-624-01	PANEL, FRONT BACK	
LCD701	1-810-772-11	DISPLAY PANEL, LIQUID CRYSTAL	

7-3. MECHANISM DECK SECTION (MG-50EX-39)



Ref. No.	Part No.	Description	Remark
101	3-912-881-01	HOUSING, CASSETTE	
* 102	3-912-882-01	HANGER, HOUSING	
103	3-912-884-01	CATCHER	
104	3-912-885-01	SPRING (LOADING LEVER), TENSION	
* 105	3-912-892-01	LEVER (B), LOADING	
* 106	3-912-883-01	ARM, SUCTION	
* 107	3-922-941-01	LEVER (A2), LOADING	
* 108	3-912-876-01	LEVER, MODE	
109	3-912-893-01	SCREW, HEAD FITTING	
110	3-579-788-01	WASHER, STOPPER	
111	X-3368-266-1	PINCH LEVER (F) ASSY	
112	X-3368-267-1	PINCH LEVER (R) ASSY	
* 113	X-3368-268-1	BASE ASSY, HEAD	
114	3-912-879-01	SPRING, PINCH PRESS	
115	3-912-897-01	SCREW (HB), STEP	
116	3-364-151-01	WASHER	
117	X-3368-841-1	CHASSIS (SV) ASSY (A), MECHANICAL	
118	3-701-437-21	WASHER	
119	3-913-825-01	FLYWHEEL (FZ)	

Ref. No.	Part No.	Description	Remark
120	X-3369-124-1	CLUTCH (S) ASSY, FR	
121	3-912-896-01	BELT	
122	X-3368-843-1	GEAR ASSY, REEL	
123	3-917-222-01	SPRING (B-T), COIL	
124	3-917-324-01	WASHER (B-T)	
125	3-912-888-01	GEAR (LOADING E)	
126	3-321-813-01	WASHER, COTTER POLYETHYLENE	
127	3-912-889-01	GEAR (LOADING F)	
128	X-3368-842-1	BRACKET (SV) ASSY, REEL	
129	1-589-604-11	REEL SENSOR BORAD	
130	1-765-460-12	CORD (WITH CONNECTOR)	
131	3-916-358-01	LEVER (TAPE IN 2)	
* 132	3-917-258-01	PLATE, GROUND	
133	3-919-553-01	GUIDE (BELT)	
HP901	1-500-196-11	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3368-684-1	MOTOR ASSY, MAIN (CAPSTAN/REEL)	
M902	X-3368-685-1	MOTOR ASSY, SUB (LOADING/TAPE OPERATION)	
S901	1-692-885-11	SWITCH, ROTARY SLIDE (TAPE OPERATION)	

AMPLIFIER **KEY**

SECTION 8
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

- Abbreviation
  G : German model

Ref.No.	Part No.	Description			Remark
*	1-655-568-11	AMPLIFIER BOARD			
		**********			
	7-621-770-XX	SCREW +PTT 2.6X8 (S)			
		< CAPACITOR >			
C801	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C802	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C803-806					
	1-136-165-00	FILM	0.1uF	5% 50V	
C821	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C822	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C823-826					
	1-136-165-00	FILM	0.1uF	5% 50V	
C851	1-128-268-11	ELECT	3300uF	20% 16V	
C853	1-126-157-11	ELECT	10uF	20% 16V	
C854	1-126-157-11	ELECT	10uF	20% 16V	
C855	1-163-243-11	CERAMIC CHIP	47PF	5% 50V	
C856	1-164-232-11	CERAMIC CHIP	0.01uF	10% 100V	
C857	1-164-623-11	CERAMIC CHIP	0.01uF	10% 100V	
		< CONNECTOR >			
CNJ801	1-764-426-21	PLUG, CONNECTOR 15P			
CNJ803	1-580-279-11	SOCKET, CONNECTOR 16P			
		< DIODE >			
D851	8-719-110-03	DIODE RD7.5ESB2			
D852	8-719-989-62	DIODE RL254			
D853	8-719-110-03	DIODE RD7.5ESB2			
		< IC >			
IC801	8-759-279-87	IC HA13151A			
		< JUMPER RESISTOR >			
JC801	1-216-295-00	CONDUCTOR, CHIP		(2012)	
		< RESISTOR >			
R801	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R802	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R803	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R804	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R805	1-216-129-00	METAL CHIP	2.2M	5% 1/10W	
R806	1-216-129-00	METAL CHIP	2.2M	5% 1/10W	
R807-810					
	1-216-134-00	METAL CHIP	2.2	5% 1/8W	
R821	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R822	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R823	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R824	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R825	1-216-129-00	METAL CHIP	2.2M	5% 1/10W	
R826	1-216-129-00	METAL CHIP	2.2M	5% 1/10W	
R827-830					
	1-216-134-00	METAL CHIP	2.2	5% 1/8W	
R853	1-216-049-11	METAL GLAZE	1K	5% 1/10W	
**********					
*	A-3298-509-A	KEY BOARD, COMPLETE (6650RDS)			
*	A-3298-513-A	KEY BOARD, COMPLETE (6659RDS:AMBER)			
*	A-3298-515-A	KEY BOARD, COMPLETE (6659RDS:GREEN)			
		**********			
*	3-921-656-01	PLATE, LIGHT GUIDE			
*	3-921-657-01	HOLDER (LCD)			
*	3-921-659-01	PLATE (LCD), GROUND			
*	3-921-660-01	SHEET (REFLECTOR)			
*	3-921-726-01	SHEET (LCD) (L)			
*	3-921-727-01	SHEET (LCD) (S)			
		< CAPACITOR >			
C701	1-163-037-11	CERAMIC CHIP	0.022uF	10% 25V	
C702	1-164-232-11	CERAMIC CHIP	0.01uF	50V	
		< CONNECTOR >			
CNP701	1-764-423-11	PIN, CONNECTOR 12P			
		< DIODE >			
D701	8-719-404-49	DIODE MA111 (6650RDS)			
D702	8-719-977-00	DIODE DTZ5.1C			

Ref. No.	Part No.	Description	Remark
D703	8-719-977-16	DIODE DTZ7.5B	
D704	8-719-977-16	DIODE DTZ7.5B	
D705	8-719-977-16	DIODE DTZ7.5B	
D706	8-719-977-16	DIODE DTZ7.5B	
D707	8-719-977-16	DIODE DTZ7.5B	
		< IC >	
IC701	8-759-171-74	IC MSM6660-01GS-V1K	
		< JUMPER RESISTOR >	
JC701	1-216-295-00	CONDUCTOR, CHIP (6659RDS)	(2012)
		< LIQUID CRYSTAL DISPLAY >	
LCD701	1-810-772-11	DISPLAY PANEL, LIQUID CRYSTAL	
		< SWITCH >	
LSW701	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(TUNER)
LSW701	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(TUNER)
LSW701	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(TUNER)
LSW702	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (⏮ (SEEK/AMS)) (6650RDS)	
LSW702	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (⏮ (SEEK/AMS)) (6659RDS:AMBER)	
LSW702	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (⏮ (SEEK/AMS)) (6659RDS:GREEN)	
LSW703	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (⏭ (SEEK/AMS)) (6650RDS)	
LSW703	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (⏭ (SEEK/AMS)) (6659RDS:AMBER)	
LSW703	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (⏭ (SEEK/AMS)) (6659RDS:GREEN)	
LSW704	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (◀◀ (PRESET)) (6650RDS)	
LSW704	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (◀◀ (PRESET)) (6659RDS:AMBER)	
LSW704	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (◀◀ (PRESET)) (6659RDS:GREEN)	
LSW705	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (▶▶ (PRESET)) (6650RDS)	
LSW705	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (▶▶ (PRESET)) (6659RDS:AMBER)	
LSW705	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (▶▶ (PRESET)) (6659RDS:GREEN)	
LSW706	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(DSPL)
LSW706	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(DSPL)
LSW706	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(DSPL)
LSW707	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(⏏)
LSW707	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(⏏)
LSW707	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(⏏)
LSW708	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (TAPE ◀▮▶) (6650RDS)	
LSW708	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (TAPE ◀▮▶) (6659RDS:AMBER)	
LSW708	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (TAPE ◀▮▶) (6659RDS:GREEN)	
LSW710	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(AF/TA)
LSW710	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(AF/TA)
LSW710	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(AF/TA)
LSW711	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(PTY)
LSW711	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(PTY)
LSW711	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(PTY)
LSW712	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(4/MTL)
LSW712	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(4/MTL)
LSW712	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(4/MTL)
LSW713	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(1/INTRO)
LSW713	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(1/INTRO)
LSW713	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(1/INTRO)
LSW714	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(5/ATA)
LSW714	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(5/ATA)
LSW714	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(5/ATA)
LSW715	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(SENS)
LSW715	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(SENS)
LSW715	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(SENS)
LSW716	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(6/BL.SKIP)

KEY

Ref. No.	Part No.	Description	Remark
LSW716	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(6/BL. SKIP)
LSW716	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(6/BL. SKIP)
LSW717	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(3/□□)
LSW717	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(3/□□)
LSW717	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(3/□□)
LSW718	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(OFF)
LSW718	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(OFF)
LSW718	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(OFF)
LSW719	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(2/REP)
LSW719	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(2/REP)
LSW719	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(2/REP)
LSW720	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(BTM)
LSW720	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(BTM)
LSW720	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(BTM)
LSW721	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(MUTE)
LSW721	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(MUTE)
LSW721	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(MUTE)
LSW722	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(+ (LEVEL))
LSW722	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(+ (LEVEL))
LSW722	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(+ (LEVEL))
LSW723	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(SEL)
LSW723	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(SEL)
LSW723	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(SEL)
LSW724	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(- (LEVEL))
LSW724	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(- (LEVEL))
LSW724	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(- (LEVEL))
LSW725	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6650RDS)	(LOUD)
LSW725	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:AMBER)	(LOUD)
LSW725	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6659RDS:GREEN)	(LOUD)

< PILOT LAMP >

PL701	1-517-166-21	LAMP, PILOT (6650RDS)	
PL702	1-517-166-21	LAMP, PILOT (6650RDS)	
PL703	1-517-165-21	LAMP, PILOT (6650RDS)	
PL703	1-517-397-21	LAMP, PILOT (6659RDS:AMBER)	
PL703	1-517-166-21	LAMP, PILOT (6659RDS:GREEN)	
PL704	1-517-165-21	LAMP, PILOT (6650RDS)	
PL704	1-517-397-21	LAMP, PILOT (6659RDS:AMBER)	
PL704	1-517-166-21	LAMP, PILOT (6659RDS:GREEN)	

< TRANSISTOR >

Q701	8-729-904-66	TRANSISTOR DTD113EK	(6650RDS)
Q702	8-729-904-66	TRANSISTOR DTD113EK	(6650RDS)
Q703	8-729-904-66	TRANSISTOR DTD113EK	(6650RDS)
Q704	8-729-904-66	TRANSISTOR DTD113EK	(6650RDS)

< RESISTOR >

R701-703	1-216-049-11	METAL CHIP	1K	5%	1/10W
R704	1-216-190-00	METAL CHIP	470	5%	1/8W
R705	1-216-089-00	METAL CHIP	47K	5%	1/10W
R706	1-216-089-00	METAL CHIP	47K	5%	1/10W
R707-710	1-216-049-11	METAL CHIP	1K	5%	1/10W
R712	1-216-033-00	METAL CHIP	220	5%	1/10W
R713	1-216-037-00	METAL CHIP	330	5%	1/10W
R714	1-216-033-00	METAL CHIP	220	5%	1/10W
R715	1-216-037-00	METAL CHIP	330	5%	1/10W
R716	1-216-033-00	METAL CHIP	220	5%	1/8W
R717	1-216-037-00	METAL CHIP	330	5%	1/10W
R718	1-216-025-00	METAL CHIP	100	5%	1/10W
R719	1-216-029-00	METAL CHIP	150	5%	1/10W
R720	1-216-025-00	METAL CHIP	100	5%	1/10W
R721	1-216-178-00	METAL CHIP	150	5%	1/8W
R722	1-216-182-00	METAL CHIP	220	5%	1/8W
R723	1-216-186-00	METAL CHIP	330	5%	1/8W
R724	1-216-174-00	METAL CHIP	100	5%	1/8W
R725	1-216-178-00	METAL CHIP	150	5%	1/8W
R727	1-216-049-11	METAL CHIP	1K	5%	1/10W
R728	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R729	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R730	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R731	1-216-061-00	METAL CHIP	3.3K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R732	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R733	1-216-073-00	METAL CHIP	10K	5%	1/10W
R734	1-216-077-00	METAL CHIP	15K	5%	1/10W
R735	1-216-049-11	METAL CHIP	1K	5%	1/10W
R736	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R737	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R738	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R739	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R740	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R741	1-216-073-00	METAL CHIP	10K	5%	1/10W
R742	1-216-077-00	METAL CHIP	15K	5%	1/10W
R743	1-216-049-11	METAL CHIP	1K	5%	1/10W
R744	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R745	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R746	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R747	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R748	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R749	1-216-049-11	METAL CHIP	1K	5%	1/10W
R750	1-216-041-11	METAL CHIP (6650RDS)	410	5%	1/10W
R752	1-216-150-00	METAL CHIP	10	5%	1/8W
R753	1-216-150-00	METAL CHIP (6650RDS)	10	5%	1/8W

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*	A-3298-507-A	MAIN BOARD, COMPLETE (6650RDS:AEP,UK)	
*	A-3298-511-A	MAIN BOARD, COMPLETE (6650RDS:G)	
*	A-3298-512-A	MAIN BOARD, COMPLETE (6659RDS)	

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< CAPACITOR >

C1	1-164-161-11	CERAMIC CHIP (6659RDS)	0.0022uF	10%	100V
C2	1-126-096-11	ELECT (6659RDS)	10uF	20%	35V
C3	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C4	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C5-7	1-124-584-00	ELECT	100uF	20%	10V
C8	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C9	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C10	1-126-157-11	ELECT	10uF	20%	16V
C11	1-136-169-00	FILM	0.22uF	5%	50V
C12	1-136-165-00	FILM	0.1uF	5%	50V
C13	1-130-479-00	MYLAR	0.0047uF	5%	50V
C14	1-110-351-11	MYLAR	0.001uF	5%	50V
C15	1-124-584-00	ELECT	100uF	20%	10V
C16	1-136-159-00	FILM	0.033uF	5%	50V
C17	1-130-475-00	MYLAR	0.0022uF	5%	50V

Ref. No.	Part No.	Description			Remark
C18-21	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C22	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C23	1-126-157-11	ELECT	10uF	20%	16V
C24	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C25	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C26	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C27	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C28	1-126-157-11	ELECT	10uF	20%	16V
C29	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C30	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C31	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C32	1-126-301-11	ELECT	1uF	20%	50V
C33	1-164-232-11	CERAMIC CHIP (6659RDS)	0.01uF	10%	100V
C34-36	1-164-232-11	CERAMIC CHIP	0.01uF	10%	100V
C91-93	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C101	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C102	1-126-301-11	ELECT	1uF	20%	50V
C103	1-124-257-00	ELECT	2.2uF	20%	50V
C106	1-124-584-00	ELECT	100uF	20%	10V
C107	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C108	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C109	1-126-157-11	ELECT	10uF	20%	16V
C110	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C111	1-126-157-11	ELECT	10uF	20%	16V
C112	1-136-169-00	FILM	0.22uF	5%	50V
C113	1-126-157-11	ELECT	10uF	20%	16V
C114	1-126-157-11	ELECT	10uF	20%	16V
C123	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C125	1-124-257-00	ELECT	2.2uF	20%	50V
C151	1-124-463-00	ELECT	0.1uF	20%	50V
C152	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C153	1-124-463-00	ELECT	0.1uF	20%	50V
C154	1-164-346-11	CERAMIC CHIP	1uF		16V
C155	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C156	1-128-057-11	ELECT	330uF	20%	6.3V
C157	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C158	1-124-584-00	ELECT	100uF	20%	10V
C201	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C202	1-126-301-11	ELECT	1uF	20%	50V
C203	1-124-257-00	ELECT	2.2uF	20%	50V
C206	1-124-584-00	ELECT	100uF	20%	10V
C207	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C208	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C209	1-126-157-11	ELECT	10uF	20%	16V
C210	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V

MAIN

Ref.No.	Part No.	Description			Remark
C211	1-126-157-11	ELECT	10uF	20%	16V
C212	1-136-169-00	FILM	0.22uF	5%	50V
C213	1-126-157-11	ELECT	10uF	20%	16V
C214	1-126-157-11	ELECT	10uF	20%	16V
C223	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C225	1-124-257-00	ELECT	2.2uF	20%	50V
C301	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C302	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C303	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C304	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C305	1-124-464-11	ELECT	0.22uF	20%	50V
C309	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C311	1-124-257-00	ELECT	2.2uF	20%	50V
C350	1-126-301-11	ELECT	1uF	20%	50V
C352	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C353	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C354	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C355	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C356	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C357	1-124-463-00	ELECT	0.1uF	20%	50V
C358	1-124-589-11	ELECT	47uF	20%	16V
C362	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C363	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C364	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C365	1-126-157-11	ELECT	10uF	20%	16V
C366	1-124-234-00	ELECT	22uF	20%	16V
C367	1-126-103-11	ELECT	470uF	20%	16V
C401	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C402	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C403	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C404	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C405	1-124-464-11	ELECT	0.22uF	20%	50V
C409	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C411	1-124-257-00	ELECT	2.2uF	20%	50V
C501	1-124-584-00	ELECT	100uF	20%	10V
C502	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C503	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C504	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C505	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C506	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C507	1-124-257-00	ELECT	2.2uF	20%	50V
C508	1-124-589-11	ELECT	47uF	20%	16V
C510	1-164-346-11	CERAMIC CHIP	1uF		16V
C512	1-124-234-00	ELECT	22uF	20%	16V
C601	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C602	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C603	1-125-705-11	DOUBLE LAYERS	0.22F		5.5V
C604	1-124-584-00	ELECT	100uF	20%	10V
C605	1-126-157-11	ELECT	10uF	20%	16V
C606	1-124-234-00	ELECT	22uF	20%	16V
C607	1-128-195-11	ELECT	39uF	20%	25V
C608	1-124-589-11	ELECT	47uF	20%	16V
C609	1-124-589-11	ELECT	47uF	20%	16V
C610	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C611	1-124-234-00	ELECT	22uF	20%	16V
C612	1-164-232-11	CERAMIC CHIP	0.01uF	10%	100V
C613	1-126-163-11	ELECT	4.7uF	20%	50V
C614	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C615-618	1-164-232-11	CERAMIC CHIP	0.01uF	10%	100V
		< CONNECTOR >			
CN351	1-766-260-11	CONNECTOR, FFC/FPC (ZIF) 7P			
* CN352	1-506-995-11	PIN, CONNECTOR (PC BOARD) 13P			
CN602	1-764-422-11	PLUG, CONNECTOR 12P			
CNP803	1-580-277-11	PIN, CONNECTOR 16P			
		< JACK >			
CNJ151	1-764-424-41	JACK, PIN 2P (LINE OUT) (6650RDS)			
		< DISCHARGE GAP >			
CP1	1-519-504-11	GAP, DISCHARGE			
		< DIODE >			
D1	8-719-911-19	DIODE	1SS119-25 (6659RDS)		
D2	8-719-040-04	DIODE	MA721WK-(TX)		
D3	8-719-034-63	DIODE	MA4091-H(QZ)		
D350	8-719-911-19	DIODE	1SS119-25		
D361	8-719-034-63	DIODE	MA4091-H(QZ)		
D362	8-719-911-19	DIODE	1SS119-25		
D501	8-719-109-72	DIODE	RD3.9ESB2		
D502	8-719-109-72	DIODE	RD3.9ESB2		
D503	8-719-911-19	DIODE	1SS119-25		
D504	8-719-911-19	DIODE	1SS119-25		
D505	8-719-911-19	DIODE	1SS119-25		
D506	8-719-911-19	DIODE	1SS119-25		
D507	8-719-977-24	DIODE	DTZ9.1B		
D601	8-719-110-31	DIODE	RD12ESB2		
D604	8-719-109-93	DIODE	RD6.2ESB2		
D605	8-719-109-89	DIODE	RD5.6ESB2		
D606	8-719-110-03	DIODE	RD7.5ESB2		
D607	8-719-914-43	DIODE	DAN202K		
D608	8-719-977-16	DIODE	DTZ7.5B		
D609	8-719-977-16	DIODE	DTZ7.5B		
D610	8-719-110-03	DIODE	RD7.5ESB2		
D611	8-719-977-16	DIODE	DTZ7.5B		
D612	8-719-110-03	DIODE	RD7.5ESB2		
D613	8-719-977-16	DIODE	DTZ7.5B		

Ref. No.	Part No.	Description	Remark
D614	8-719-977-16	DIODE DTZ7.5B	
D615	8-719-977-16	DIODE DTZ7.5B	
D617	8-719-977-16	DIODE DTZ7.5B	
D618	8-719-977-16	DIODE DTZ7.5B	
D619	8-719-977-16	DIODE DTZ7.5B	
D622	8-719-977-16	DIODE DTZ7.5B	
D623	8-719-977-54	DIODE DTZ16C	
D624	8-719-911-19	DIODE 1SS119-25	
D625	8-719-110-31	DIODE RD12ESB2	
		< IC >	
IC1	8-759-242-66	IC TC4W66F	
IC2	8-759-823-81	IC LC7216M	
IC3	8-759-163-63	IC TDA7330BD-013TR	
IC151	8-759-909-71	IC BA4558F	
IC301	8-752-071-19	IC CXA1946Q	
IC350	8-759-161-01	IC HA12164	
IC360	8-759-823-87	IC LB1638M	
IC501	8-759-332-68	IC MN1884820S3N	
IC571	8-759-097-36	IC RH5VA40AA	
IC601	8-759-182-76	IC BA3910B-V3	
		< JACK >	
J1	1-764-808-11	JACK (ANT) (ANTENNA) (6650RDS)	
J1	1-770-279-11	JACK, ANTENNA (ISO) (ANTENNA) (6659RDS)	
J501	1-566-822-11	JACK (REMOTE IN) (6650RDS)	
		< JUMPER RESISTOR >	
JC1	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC2	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC3	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC4	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC5-7	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC8	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC9	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC10	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC11	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC12-15	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC16-19	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC20	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC21	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC22	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC23-25	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC26-28	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC29	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC30	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC31	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC32-35	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC36	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC37	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC38	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC39	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC40	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC41	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC43	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC44-47	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC48-50	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC51	1-216-295-00	CONDUCTOR, CHIP (6650RDS) (2012)	
		< COIL >	
L1	1-414-137-31	INDUCTOR 0.22uH (6659RDS)	
L2	1-410-065-11	INDUCTOR 3.3mH (6659RDS)	
L4	1-410-971-11	INDUCTOR 10uH	
L501	1-410-971-11	INDUCTOR 10uH	
		< TRANSISTOR >	
Q1	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q2	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q3	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q4	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q101	8-729-920-21	TRANSISTOR DTC314TKH04	
Q102	8-729-920-21	TRANSISTOR DTC314TKH04	
Q103	8-729-920-21	TRANSISTOR DTC314TKH04	
Q151	8-729-920-21	TRANSISTOR DTC314TKH04	
Q201	8-729-920-21	TRANSISTOR DTC314TKH04	
Q202	8-729-920-21	TRANSISTOR DTC314TKH04	
Q203	8-729-920-21	TRANSISTOR DTC314TKH04	
Q361	8-729-921-48	TRANSISTOR 2SD1760F5-Q	
Q362	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q363	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q364	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
Q365	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q501	8-729-020-67	TRANSISTOR XN1A312-TX	
Q502	8-729-020-67	TRANSISTOR XN1A312-TX	
Q503	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q603	8-729-030-18	TRANSISTOR 2SD2525	
Q605	8-729-020-67	TRANSISTOR XN1A312-TX	
Q606	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q607	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q608	8-729-020-67	TRANSISTOR XN1A312-TX	
Q609	8-729-921-48	TRANSISTOR 2SD1760F5-Q	

MAIN

Ref. No.	Part No.	Description			Remark
Q610	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q611	8-729-027-43	TRANSISTOR	DTC114EKA-T146		
		< RESISTOR >			
R1	1-247-747-11	CARBON (6659RDS)	470	5%	1/2W
R2	1-216-049-11	METAL CHIP	1K	5%	1/10W
R3	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R4	1-216-073-00	METAL CHIP	10K	5%	1/10W
R8	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R9	1-216-073-00	METAL CHIP	10K	5%	1/10W
R10	1-216-089-00	METAL CHIP	47K	5%	1/10W
R11	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R12	1-216-049-11	METAL CHIP	1K	5%	1/10W
R13	1-216-075-00	METAL CHIP	12K	5%	1/10W
R14	1-216-089-00	METAL CHIP	47K	5%	1/10W
R15	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R16	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R17	1-216-073-00	METAL CHIP	10K	5%	1/10W
R18	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R19	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R20	1-216-097-00	METAL CHIP	100K	5%	1/10W
R21	1-216-258-00	METAL CHIP	330K	5%	1/8W
R22	1-249-411-11	CARBON	330	5%	1/4W
R101	1-216-065-00	METAL CHIP (6650RDS:G)	4.7K	5%	1/10W
R101	1-216-073-00	METAL CHIP (6650RDS:AEP, UK/6659RDS)	10K	5%	1/10W
R102	1-216-081-00	METAL CHIP (6650RDS:AEP, UK/6659RDS)	22K	5%	1/10W
R102	1-216-085-00	METAL CHIP (6650RDS:G)	33K	5%	1/10W
R108	1-216-081-00	METAL CHIP	22K	5%	1/10W
R109	1-216-085-00	METAL CHIP	33K	5%	1/10W
R110	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R111	1-216-081-00	METAL CHIP	22K	5%	1/10W
R112	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R113	1-216-081-00	METAL CHIP	22K	5%	1/10W
R124	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R125	1-216-025-00	METAL CHIP	100	5%	1/10W
R126	1-216-073-00	METAL CHIP	10K	5%	1/10W
R127	1-216-025-00	METAL CHIP	100	5%	1/10W
R151	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R152	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R153	1-216-049-11	METAL CHIP	1K	5%	1/10W
R154	1-216-049-11	METAL CHIP	1K	5%	1/10W
R201	1-216-065-00	METAL CHIP (6650RDS:G)	4.7K	5%	1/10W
R201	1-216-073-00	METAL CHIP (6650RDS:AEP, UK/6659RDS)	10K	5%	1/10W
R202	1-216-081-00	METAL CHIP (6650RDS:AEP, UK/6659RDS)	22K	5%	1/10W
R202	1-216-085-00	METAL CHIP (6650RDS:G)	33K	5%	1/10W
R208	1-216-081-00	METAL CHIP	22K	5%	1/10W
R209	1-216-085-00	METAL CHIP	33K	5%	1/10W
R210	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R211	1-216-081-00	METAL CHIP	22K	5%	1/10W
R212	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R213	1-216-081-00	METAL CHIP	22K	5%	1/10W
R224	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R225	1-216-025-00	METAL CHIP	100	5%	1/10W
R226	1-216-073-00	METAL CHIP	10K	5%	1/10W
R227	1-216-025-00	METAL CHIP	100	5%	1/10W
R301	1-216-109-00	METAL CHIP	330K	5%	1/10W
R302	1-216-109-00	METAL CHIP	330K	5%	1/10W
R303	1-216-076-00	METAL CHIP	13K	5%	1/10W
R304	1-216-079-00	METAL CHIP	18K	5%	1/10W
R305	1-216-109-00	METAL CHIP	330K	5%	1/10W
R351	1-216-079-00	METAL CHIP	18K	5%	1/10W
R352	1-216-085-00	METAL CHIP	33K	5%	1/10W
R353	1-216-079-00	METAL CHIP	18K	5%	1/10W
R354	1-216-097-00	METAL CHIP	100K	5%	1/10W
R355	1-216-109-00	METAL CHIP	330K	5%	1/10W
R356	1-216-113-00	METAL CHIP	470K	5%	1/10W
R361	1-216-049-11	METAL CHIP	1K	5%	1/10W
R362	1-249-389-11	CARBON	4.7	5%	1/4W
R363	1-249-389-11	CARBON	4.7	5%	1/4W
R364	1-216-073-00	METAL CHIP	10K	5%	1/10W
R365	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R401	1-216-109-00	METAL CHIP	330K	5%	1/10W
R402	1-216-109-00	METAL CHIP	330K	5%	1/10W
R403	1-216-076-00	METAL CHIP	13K	5%	1/10W
R404	1-216-079-00	METAL CHIP	18K	5%	1/10W
R405	1-216-109-00	METAL CHIP	330K	5%	1/10W
R501	1-216-198-00	METAL CHIP	1K	5%	1/8W
R502-505	1-216-049-11	METAL CHIP	1K	5%	1/10W
R506	1-216-109-00	METAL CHIP	330K	5%	1/10W
R507	1-249-417-11	CARBON	1K	5%	1/4W
R508	1-249-421-11	CARBON	2.2K	5%	1/4W
R509	1-216-049-11	METAL CHIP	1K	5%	1/10W
R510	1-216-262-00	METAL CHIP	470K	5%	1/8W
R511	1-216-049-11	METAL CHIP	1K	5%	1/10W
R512	1-216-049-11	METAL CHIP	1K	5%	1/10W
R513	1-216-198-00	METAL CHIP	1K	5%	1/8W
R514	1-216-049-11	METAL CHIP	1K	5%	1/10W
R515	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R516	1-216-049-11	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R517	1-216-097-00	METAL CHIP	100K	5%	1/10W
R518	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R519	1-216-017-00	METAL CHIP	47	5%	1/10W
R520-522					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R524-529					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R530	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R531	1-216-097-00	METAL CHIP	100K	5%	1/10W
R533	1-216-097-00	METAL CHIP	100K	5%	1/10W
R535	1-216-097-00	METAL CHIP	100K	5%	1/10W
R537	1-216-081-00	METAL CHIP	22K	5%	1/10W
R538	1-216-097-00	METAL CHIP (6650RDS)	100K	5%	1/10W
R539	1-216-097-00	METAL CHIP (6659RDS)	100K	5%	1/10W
R540-545					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
R546	1-216-246-00	METAL CHIP	100K	5%	1/8W
R547-549					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R550	1-216-246-00	METAL CHIP	100K	5%	1/8W
R551	1-216-049-11	METAL CHIP	1K	5%	1/10W
R553	1-216-049-11	METAL CHIP	1K	5%	1/10W
R605	1-216-186-00	METAL CHIP	330	5%	1/8W
R606	1-216-097-00	METAL CHIP	100K	5%	1/10W
R607-609					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
R610	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R611	1-216-113-00	METAL CHIP	470K	5%	1/10W
R612	1-216-105-11	METAL CHIP	220K	5%	1/10W
R613	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R614	1-216-097-00	METAL CHIP	100K	5%	1/10W
R615	1-216-083-00	METAL CHIP	27K	5%	1/10W
R616	1-216-089-00	METAL CHIP	47K	5%	1/10W
R617	1-216-089-00	METAL CHIP	47K	5%	1/10W
R618	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R619	1-216-073-00	METAL CHIP	10K	5%	1/10W
R620-622					
	1-247-807-11	CARBON	100	5%	1/4W
R625	1-216-049-11	METAL CHIP	1K	5%	1/10W
R626	1-216-089-00	METAL CHIP	47K	5%	1/10W
R627	1-216-081-00	METAL CHIP	22K	5%	1/10W
R628	1-216-073-00	METAL CHIP	10K	5%	1/10W
R629	1-216-025-11	METAL CHIP	100	5%	1/10W
R630	1-216-041-11	METAL CHIP	470	5%	1/10W
R631	1-216-073-00	METAL CHIP	10K	5%	1/10W
R632	1-216-025-11	METAL CHIP	100	5%	1/10W
R633	1-216-097-00	METAL CHIP	100K	5%	1/10W
R634	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R635	1-249-385-11	CARBON	2.2	5%	1/4W
R636	1-249-385-11	CARBON	2.2	5%	1/4W
		< VARIABLE RESISTOR >			
RV1	1-241-768-11	RES, ADJ, CARBON 220K			
RV301	1-238-597-11	RES, ADJ, CARBON 1K			
RV401	1-238-597-11	RES, ADJ, CARBON 1K			
		< SWITCH >			
S501	1-571-478-11	SWITCH, SLIDE (POWER SELECT)			
S601	1-571-532-21	SWITCH, TACTILE (RESET)			
		< TUNER >			
TU1	A-3282-003-A	TUNER UNIT (FM/AM)			
		< VIBRATOR >			
X1	1-577-126-51	VIBRATOR, CRYSTAL (7.2MHz)			
X2	1-760-556-11	VIBRATOR, CRYSTAL (4.332MHz)			
X501	1-579-952-21	VIBRATOR, CERAMIC (8MHz)			
X502	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)			

****

MISCELLANEOUS

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17	1-765-082-11	CORD (WITH CONNECTOR) (6650RDS)
18	1-769-439-11	CORD (WITH CONNECTOR) (ISO) (6659RDS:AMBER)
19	1-769-439-21	CORD (WITH CONNECTOR) (ISO) (6659RDS:GREEN)
130	1-765-460-12	CORD (WITH CONNECTOR)
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)
HP901	1-500-196-11	HEAD, MAGNETIC (PLAYBACK)
M901	X-3368-684-1	MOTOR ASSY, MAIN (CAPSTAN/REEL)
M902	X-3368-685-1	MOTOR ASSY, SUB (LOADING/TAPE OPERATION)
S901	1-692-885-11	SWITCH, ROTARY SLIDE (TAPE OPERATION)

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HARDWARE LIST

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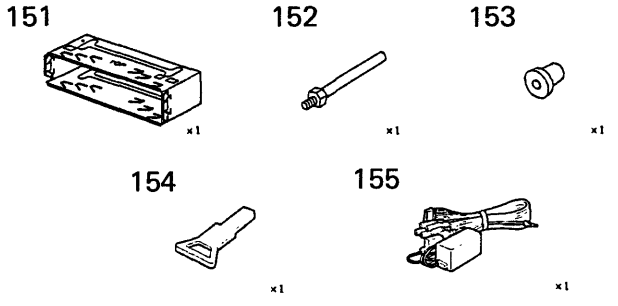
#1	7-621-772-10	SCREW +B 2X4
#2	7-621-770-XX	SCREW +PTT 2.6X8 (S)
#3	7-624-104-04	STOP RING 2.0, TYPE -E
#4	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3
#5	7-628-253-05	SCREW +PS 2X4
#6	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT
#7	7-621-773-87	SCREW +PTT 2.6X10 (S)

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		******************************	
	1-575-616-21	CORD (WITH TERMINAL) (6650RDS)	
	3-323-209-01	BOLT (4-5), STUD (6659RDS)	
	3-798-218-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN) (6650RDS)	
	3-798-218-41	MANUAL, INSTRUCTION (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (6650RDS:AEP, UK)	
	3-798-218-61	MANUAL, INSTRUCTION (ENGLISH) (6659RDS)	
	3-798-675-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, GERMAN, ITALIAN) (6650RDS)	
	3-798-675-41	MANUAL, INSTRUCTION, INSTALL (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (6650RDS:AEP, UK)	
	X-3367-795-1	CASE ASSY	
**********			
		MOUNTING HARDWARE	
		**********	
151	X-3366-235-1	FRAME ASSY, FITTING (6650RDS)	
151	X-3368-733-2	FRAME ASSY, FITTING (6659RDS)	
152	3-386-828-01	SCREW, FITTING	
* 153	3-358-697-01	BUSHING	
154	3-388-078-01	KEY	
155	1-765-082-11	CORD (WITH CONNECTOR) (6650RDS)	



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